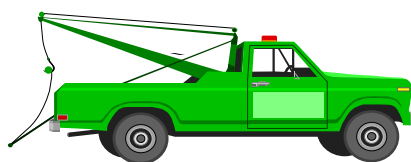
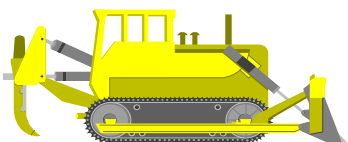
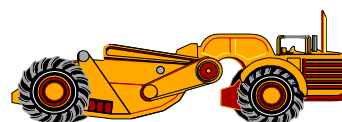


Naval Facilities Engineering Command  
1322 Patterson Avenue, SE, Suite 1000  
Washington Navy Yard DC 20374-5065



# MANAGEMENT OF CIVIL ENGINEERING SUPPORT EQUIPMENT



NAVFAC P-300  
September 2003

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## FOREWORD

The Commander, Naval Facilities Engineering Command, has prepared this publication. The policies set forth herein implement the requirements of the Chief of Naval Operations as prescribed in the DoD 4500.36-R applicable to motor vehicle management. These policies and procedures are applicable for all personnel concerned with the management of transportation equipment throughout the Navy. Clients are encouraged to closely review the changes as the publication has undergone extensive review. A Change Synopsis is provided for information and reflects the majority of the pertinent changes that have been made.

The purpose of this publication is to assist management at all levels in properly discharging their responsibilities in the efficient management of the transportation program. The instructions, guides, procedures, and criteria are provided for exercising both technical and management controls to attain full and cost effective utilization of funds, personnel, and equipment.

General and detailed procedures for the administration, operation, and maintenance of transportation equipment are covered. These areas include administration, procurement, rental, charter, assignment, loan, utilization, registration and technical record control, disposition, and operational procedures for automotive, construction, and railroad equipment. Procedures are also included for maintenance planning, scheduling, maintenance control, material support, vehicle and equipment modification, painting, identification and markings, protective coatings, and for selection and application of fuels and lubricants.

Of particular interest, note that this edition addresses conversion of the Alpha Code A-N vehicles to the General Services Administration and the sell of non-excess Civil Engineering Support Equipment at Naval Working Capital Funded activities. The Driver's license section has been thoroughly revised. The Navy Driver's Handbook will not be re-issued. In the future, activities should refer to state guidelines and manufacturer's guidelines for operating vehicles.

This manual supersedes NAVFA P-300 of May 1997 and is certified as an official publication of the Naval Facilities Engineering Command and has been reviewed and approved.



R.L. DEACON  
Director, Navy Public Works

## *ABSTRACT*

This publication provides instructions for the management of transportation equipment. Procedures for administration, operation, and maintenance are detailed. These include procurement, technical record control, disposition and procedures for the operation of automotive construction, and railroad equipment. Maintenance functions such as scheduling, shop control, material support, equipment modification, painting, protective coatings, markings, and guidelines for fuels and lubricants are included.

**NAVFAC P-300**  
**MANAGEMENT OF CIVIL ENGINEERING SUPPORT EQUIPMENT**

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## ***CHANGE SYNOPSIS***

The majority of the major changes are highlighted in this synopsis.

Paragraph 1.4. Adds that standards and licensing also apply to vehicles acquired through GSA.

Paragraph 1.6. List of safety instructions expanded.

Paragraph 1.7. Editorial changes. List of claimants added, following para. 1.7.3a(2), followed by list of SOUs after para 1.7.3a(3).

Paragraph 1.7.3a. Adds statement that LANTDIV TEMC manages specially held programs.

Paragraph 1.7.3b. Minute revision of TEMC responsibilities .

Paragraph 1.10. Expands list of items that should be available during TMAV visits, including current FAST reports and waiver letters for alternative fuel vehicles. Compliance with Navy AFV policy for acquisition of AFVs and for reduction of petroleum is required.

Paragraph 1.10.2. Requires TEMC to complete one-page executive summary on each visit and written report to client as soon as possible after visit completion.

Paragraph 1.12.2. Updates reference pertaining to personnel on official TDY/TAD. Excerpt from JTR inserted outlining type of vehicles authorized while TDY or operating in the local area.

Paragraph 1.13.6. Updates rules regarding temporary duty related to H-T-W.

Paragraph 2.1.1. Revises General Assignment Criteria, including brief discussion on vehicles acquired through the General Services Administration (GSA).

Paragraph 2.1.2. Provides more definitive details on management of Class B and Class C vehicles, with particular emphasis on management of Class B assignments.

Paragraph 2.1.2. Clarifies authorization for Class IV and Executive vehicle assignments; these units are also considered as Class A vehicles.

Paragraph 2.1.3f. Added. Ground Maintenance Equipment not to be procured using OPN funds.

Paragraph 2.1.4. Replace ship, afloat and shore vehicles as normal CESE.

Paragraph 2.1.6.a. Requires activity approval for loan of government vehicle to other Navy or U.S. military activity if within immediate area; otherwise TEMC approves.

Paragraph 2.1.7. Use of courtesy vehicles clarified.

Paragraph 2.1.10b. Requires Commanding Officer's "in writing" authorization for Morale, Welfare and Recreation intermittent, free use of Navy-owned vehicles.

Paragraph 2.2.2. Revises procedures for IOs, especially fire truck requests routing.

Paragraph 2.3.1. Rewritten: Emphasis on use of Capital Purchase Program (CPP) and NWCF funding.

Paragraph 2.4.1. Revised for clarity. Emphasizes that acquisition of passenger-carrying vehicles shall be done with OPN for all activities, including NWCF.

Paragraph 2.5. Added. DoD implementation and supplementation of the FAR is issued in the DFARS under authorization and subject to the authority, direction, and control of the Secretary of Defense.

Paragraph 2.6. Emphasizes alternative fuel mandates.

Paragraph 2.7. Replacement criteria paragraphs 2.7.1, 2.7.2 and 2.7.3 revised.

Paragraph 2.7.1. The term "zone of eligibility" has been deleted and sentence clarified.

Paragraph 2.8.1. Rules clarified regarding acquiring accessories and attachments.

Paragraph 2.8.2. Deletes redundant LIRN breakdown; data in table merged with 2.82.

Paragraph 2.9. Completely revises rental and lease procedures, to include new rental and lease terminology.

Paragraph 2.9.5b(11). Revises procedures for completing economic analysis: See Appendix H for sample analysis.

Paragraph 2.9.6. Provides additional guidance when renting and leasing equipment, especially in light of man lift incidents.

Paragraph 2.10c(3). Issuance of ISO/USNG numbers to NCFs/SOUs clarified.

Paragraph 2.10.1. Revises procedures for reporting acquisition and requesting USN number.

Paragraph 2.10.1b. Advises clients to use website load sheet or self-generated form.

Paragraph 2.11. Requires TEMC review and approval of alterations and modifications to support transportation of handicapped personnel.

Paragraph 2.12. Added. Addresses sale of non-excess CESE at Navy Working Capital Fund activities.

Paragraph 2.14.9. Emphasizes submission of QDR when deficiencies described in paragraphs 2.14.4, 2.14.5 and 2.14.6 are discovered.

Paragraph 2.15.1. Changed to allow procurement of non-standard color vehicles.

Paragraph 2.15.3. Reference to color of recruiting vehicles eliminated since GSA provides standard manufacturers' colors for all vehicles.

Paragraph 2.15.4. Updates license plate procedures.

Paragraph 2.15.6. Addresses painting of aircraft refueling equipment.

Paragraph 2.15.12. Revised. Requires Security to be standard manufacturer's color.

Paragraph 2.15.14. Eliminates need to route exemption from markings requests for security via CNO.

Paragraph 3.2. Retain dispatch logs for 90 days vice 36 months, same as NCF/SOUs.

Paragraph 3.4e. Sentence revised for clarification only.

Paragraph 3.6.2. Provides a sample utilization report in lieu of NAVFAC Form 9-11240/9. Blank 9-11240/9 deleted from Appendix H. Also, utilization analysis, paragraph 3.6.5 combined.

Paragraph 3.6.3. Summary of alpha codes listed in this section vice appendix H.

Paragraph 3.7.1. Addresses client's role in implementing EO 13149, regarding petroleum use reduction.

Paragraph 3.7.3 Added. Addresses client's role in recovering ground fuels tax refunds.

Paragraph 3.8. Licensing requirements clarified.

Paragraph 3.8.5. Both the OF-345 and SF-47 are obsolete but may be used as management tools for licensing programs. This paragraph also allows lamination of the OF-346.

Paragraph 3.8.6c. Clarifies cadre of personnel who must attend EVOC training prior to operating Navy assigned vehicles.

Paragraph 3.8.8b. Updates/emphasizes statutory and regulatory requirements for handling hazardous material and hazardous wastes.

Paragraph 3.8.11. Licenses must be renewed before the end of the expiration month.

Paragraph 3.8.12. Added. Revoke OF-346 and constr. license whenever the state license is revoked.

Paragraph 3.8.13b(3). Cites specific Code of Federal Regulation dealing with placarding hazardous materials.

Paragraph 3.8.13. Updates CDL testing for controlled substance and alcohol abuse. See website <http://www.dot.gov/ost/dapc/regulations.html> for specific details on drug testing program.

Figure 3-8. Figure revised and Code 5460 man lift added as part of equipment where licensing is required.

Paragraph 3.10.5a. Clarifies the use of training licenses.

Paragraph 3.12.1b(2) and (3). Allows the word "all" to be used on the license for attachments and type of controls.

Paragraph 3.13.2. Renew Construction Equipment License every four years vice two.

Paragraph 3.13.3. Requires that an operator report revocation or suspension of driving to immediate supervisor on the next duty day following the revocation or suspension.

Paragraph 3.15.1 Added. Addresses Navy policy on contractor use of GSA vehicles.

Paragraph 3.18.1 and 3.18.2. Policy on credit cards revised to eliminate Wright Express as a fuel provider. Directs customers to TEMC for assistance.

Paragraph 3.21.2. Eliminates note pertaining to transporting troops in tactical vehicles and adds paragraph 3.21.2e regarding use of tactical vehicles for NCFs and SOUs.

Paragraph 3.23.1. Sets requirement for each activity to evaluate the benefits and costs of implementing a radio-dispatched taxi system.

Paragraph 3.24.4. Activity to make necessary arrangements for permits. TEMC/NAVFACECOM assistance is readily available where necessary.

Paragraph 3.24.7. Deletes "correct loading principles" chart. Refer to manufacturer recommendations and Navy Driver's Handbook (same chart is maintained).

Paragraph 3.25.5 and 3.25.6a. Sentences revised for clarity.

Paragraph 3.25.7. Job authorization statement revised for clarity.

Paragraph 3.26. Added. Provides guidance on the use of cellular telephones. See Federal Register: March 1, 2002 (Volume 67, Number 41) and OPNAVINST 5100.12 for additional guidance.

Paragraph 4-1.9.2. Cannibalization policy is addressed.

Paragraph 4-1.11.5. EC 0729, wrecker, added to list of equipment for weight test.

Chapter 4, Section 2. NCF/SOU Maintenance. Editorial changes.

Appendix A. Expands definition of construction equipment and redefines passenger carrying vehicles.

Appendix C. and E. NCF/SOU requirements, including Containerization Program.

Appendix F. Revised to also reflect GSA equipment codes.

Appendix H. Where possible, most forms have either been merged into the publication or made available on the website. Information on ordering the forms is also provided in this appendix.

Name Change: OPNAVNOTE 5450 changes Construction Battalion Center to Naval Facilities Expeditionary Logistics Center.

# **MANAGEMENT OF CIVIL ENGINEERING SUPPORT EQUIPMENT**

## **CHAPTER 1. GENERAL**

1.1 **Purpose.** This publication is a compilation of directives issued by the Secretary of the Navy (SECNAV), the Chief of Naval Operations (CNO), and the Commander, Naval Facilities Engineering Command (COMNAVFACENGCOM). These administrative and technical instructions and procedures should be used, in conjunction with locally developed transportation instructions, by all personnel concerned with the administration, operation, and maintenance of automotive vehicles, construction, and railway equipment collectively referred to as Civil Engineering Support Equipment (CESE).

1.2 **Scope.** These procedures apply to responsibilities of COMNAVFACENGCOM for the inventory objectives (allowances for NCFs/SOUs), requirements, procurement, assignment, registration, technical record control, inventory reporting, disposition, operation and maintenance of automotive vehicles, construction, and railway equipment. Policies and responsibilities of other commands and offices are presented insofar as they affect COMNAVFACENGCOM in performance of its responsibilities. A glossary of frequently used transportation equipment terms and a list of abbreviations are included in Appendices A and B, respectively. A list of related publications is included in the reference section.

1.3 **Cancellation.** This publication supersedes and cancels the NAVFAC P-300, May 1997.

1.4 **Authority.** By authority of SECNAV and CNO, COMNAVFACENGCOM is assigned responsibility for administration and procurement of CESE for the Navy, except that of the Marine Corps and as otherwise provided by higher authority. COMNAVFACENGCOM also has responsibility for programs related to maintenance, alteration, repair, and upkeep of transportation equipment and of the operating standards and procedures pertaining thereto. This publication also establishes standards and procedures for testing and licensing of all Navy transportation equipment drivers and operators, as well as procedures for vehicles acquired through the General Services Administration. Procedures specific to the Naval Construction Forces (NCF), Naval Construction Training Centers (NCTCs), and Special Operating Units (SOUs) are either noted in the applicable subparagraph or in appendices. Procedures for Weight Handling Equipment (WHE), Aircraft Ground Support Equipment (GSE) and Material Handling Equipment (MHE) are addressed by other applicable publications/instructions.

1.5 **Department of Defense Vehicle Policy.** The Department of Defense (DoD) policy for the management, acquisition, and use of motor vehicles (DoD 4500.36-R) is further augmented in depth and detail for Navy use by this publication and related COMNAVFACENGCOM instructions.

**1.6 DoD Occupational Safety and Health (OSH) Program Requirements and Procedures.**

The operation of an effective on-the-job occupational safety and health program is a line management responsibility at all echelons and shall, to the extent of their authority, comply with OSH program guidance and regulations and provide DoD personnel safe and healthful working conditions. This guidance is provided in the DoDINST 6055.1, DoD Occupational Safety and Health Program. Also included are OPNAVINST 5100.23E, Navy Occupational Safety and Health Programs and OPNAVINST 5102.1 series, Mishap Investigation. DoD personnel shall comply with all applicable OSH program rules and regulations. Specifically, this shall include compliance with work safety and health standards, proper use of personal protective equipment and clothing, and proper reporting to DoD management of unsafe conditions, hazardous exposure, or occupational injury or illness.

**1.7 Program Responsibilities for Automotive Vehicles, Construction, and Railway Equipment**

**1.7.1 Naval Facilities Engineering Command.** By authority of SECNAV and CNO, NAVFACENGCOM has the following technical responsibility for Civil Engineering Support Equipment (CESE):

a. Procure and administer the assignment and utilization of transportation equipment in accordance with the mission requirements established by CNO and the operational requirements of offices and commands. Develop short and long-range CESE program objectives and funding requirements.

b. Establish standards and ensure implementation for operation and general utilization.

c. Prepare and ensure maintenance standards are implemented.

d. Administer public laws relating to:

(1) Vehicle acquisition.

(2) Official use of Government-owned and operated vehicles.

(3) Mass transportation and school bus operations.

(4) The sale, replacement, and retirement of assigned equipment in accordance with the DoD Disposal Manual, DoD 4160.21M as amended.

e. Establish procedures for hire/lease/rental of CESE.

f. Maintain current and complete inventory files and records for all commands/activities, ashore and afloat.

g. Establish criteria for replacement and retirement in compliance with DoD guidance; establish criteria when specific DoD guidance is not available.

h. Develop specifications, initiate their coordination with other commands/activities, and then expedite their adoption as coordinated specifications in either the federal or military series.

i. Through command channels and in coordination with other offices and commands, determine Navy-wide requirements in support of programs authorized by CNO.

j. Through command channels verify, determine the degree of, and assist in the compliance with technical standards and safety regulations.

k. Coordinate transportation cost accounting and cost reporting procedures with the Financial Management and Comptroller Policy of the Navy and other offices and commands.

l. Review/approve all requests for local procurement of CESE.

m. Approve, in a staff capacity to CNO, transportation equipment inventory objectives and other functions as directed.

#### 1.7.2 **Naval Facilities Expeditionary Logistics Center (NFELC)**

a. Process the CESE procurement program.

b. Provide data processing support for transportation equipment inventory, inventory objectives, requirements, procurement, assignment, and data processing support areas in accordance with the policies and procedures prescribed by COMNAVFACENGCOM.

c. Prepare and forward guidance to Navy Working Capital Fund (NWCF) activities for requirements submission. Additionally, NFELC Port Hueneme provides similar services to the NCF and SOUs. Definitions of the units involved are found in Appendix B of this publication.

d. Assign U. S. Navy registration numbers and issue license plates.

e. Effect standardization of equipment as practicable in conformity with procedures established for the DoD Standardization Program.

#### 1.7.3 **Transportation Equipment Management Centers (TEMCs)**

a. Staff Technical Assistance. To facilitate execution of the policies and procedures set forth in this publication and to accomplish assigned centralized technical and management responsibilities for the transportation equipment program, Transportation Equipment Management Centers (TEMCs) were established within designated COMNAVFACENGCOM Engineering Field Divisions (EFDs). A list of the



Commands/Major Claimants holding CESE inventory objectives are identified below. The TEMCs support the Commands and provide direct support of field activities on a geographical basis as outlined below. TEMC is also the program manager and performs functions for designated Navy specially held programs.

(1) The PACDIV TEMC supports all field activities in the geographic area covered by the PACDIV and SOUTHWESTDIV EFDs, including EFAs WESTDIV and NORTHWESTDIV. This area includes the states of California, Nevada, Arizona, New Mexico, Utah, Idaho, Oregon, Colorado, Washington, Montana, Alaska, and Hawaii, as well as the entire Pacific Ocean, Indian Ocean and Antarctica. PACDIV also provides major claimant support for transportation matters to Commander, U.S. Pacific Fleet as well as Regional Commanders.

(2) The LANTDIV TEMC supports all field activities in the geographic area covered by the SOUTHDIV, NORTHDIV, and LANTDIV EFDs, including EFAs CHESDIV, MED, and GREAT LAKES. This area includes everything not covered by PACDIV, as described above, including Regional Commanders. In addition, LANTDIV provides major claimant support for transportation matters to all of the major claimants listed below except Commander, U.S. Pacific Fleet (N00070). The LANTDIV TEMC shall coordinate with the PACDIV TEMC on all claimant issues affecting activities in the PACDIV geographic area.

#### UIC

#### CLAIMANT

N00011	Chief of Naval Operations
N00012	Assistant for Administration to the Under Secretary of the Navy
N00014	Chief of Naval Research
N00018	Bureau of Medicine and Surgery
N00019	Naval Air Systems Command
N00022	Chief of Naval Personnel
N00023	Naval Supply Systems Command
N00024	Naval Sea Systems Command
N00025	Naval Facilities Engineering Command
N00030	Strategic Systems Programs
N00033	Military Sealift Command
N00039	Space and Naval Warfare System Command
N00060	Commander, U.S. Atlantic Fleet
N00061	Commander, U.S. Naval Forces, Europe
N00062	Chief of Naval Education and Training
N00063	Naval Telecommunications Command
N00065	Naval Meteorology and Oceanography Command
N00069	Naval Security Group Command
N00070	Commander, U.S. Pacific Fleet
N00072	Commander, Naval Reserve Force
N00074	Naval Special Warfare Command

(3) The Naval Facilities Expeditionary Logistics Center (NFELC Port Hueneme) (Code 157) supports all Special Operating Units (SOUs) and the Naval Construction Training Centers (NCTCs) and their Detachments. NFELC Port Hueneme provides major claimant support for transportation matters for the NCF and SOUs. NFELC Port Hueneme also shall act as the focal point for SOUs desiring to input changes or improvements to this publication. SOUs are defined by the following list:

- (a) Amphibious Construction Battalions (PHIBCBs)
- (b) Naval Beach Groups (NAVBEACHGRUs)
- (c) Assault Craft Units (ACUs)
- (d) Naval Beachmaster Units (BMUs)
- (e) Naval Cargo Handling and Port Group (NAVCHAPGRU)
- (f) Naval Explosive Ordnance Disposal Groups (EODGRUs)
- (g) Mobile Diving and Salvage Units (MDSUs)
- (h) Fleet Hospital Support Office (FHSO)
- (i) Fleet Hospital Operations and Training Command (FHOTC)
- (j) Fleet Information Warfare Centers (FIWCs)
- (j) Helicopter Tactical Wing Atlantic (HTWL)
- (k) Helicopter Mine Countermeasure Squadrons (HMs)
- (l) Naval Construction Training Centers (NCTCs)
- (m) Naval Coastal Warfare Groups (NCWGs)
- (n) Naval Mobile Inshore Underwater Warfare Units (MIUWUs)
- (o) Harbor Defense Command Units (HDCUs)
- (p) Inshore Boat Units (IBUs)
- (q) Naval Expeditionary Logistics Support Force (NELSF)
- (r) Naval Cargo Handling Battalions (NCHBs)

(4) The Second Naval Construction Brigade Detachment, Gulfport MS (N46) supports Naval Construction Forces, including NCRs, NMCBs, NCFSUs, CBMUs, CBUUs, and UCTs homeported or deployed within the CINCLANT geographic area.

(5) The Third Naval Construction Brigade Detachment, Port Hueneme Ca (N46) supports Naval Construction Forces, including NCRs, NMCBs, NCFSUs, CBMUs, CBUUs, and UCTs homeported or deployed within the CINCPAC geographic area.

b. TEMC Responsibilities. The TEMCs promulgate the program and administer the assignment, replacement, and disposal of transportation, and construction equipment and provide technical advice and assistance for operation and maintenance of transportation department functions, which include:

- (1) Provide technical assistance to the activities/claimants.
- (2) Perform inventory objective analysis of all transportation equipment.

(3) Maintain Construction, Automotive and Specialized Equipment Management Information System (CASEMIS) activity inventory objectives in current status.

(4) Review all transportation equipment requirements for the submission year in accordance with the detailed guidance in paragraph 2.8.

(5) Act as a central clearing agency for the Navy in exchanging and disposing of assigned equipment. Reassign excess usable transportation equipment to best fill approved inventory objectives. If excess equipment is in usable condition but not economical to ship or transfer any distance, the TEMC is authorized to provide disposal instructions to the activity.

(6) Coordinate resources when assistance is needed requiring reassignments, and disposals between activities/claimants.

(7) Emphasize the most economical mix of CESE for mission accomplishment.

(8) Ensure that continual review of activity requirements accomplishes the following objectives:

(a) Eliminates requests for vehicle replacements that do not meet the established life expectancy replacement criteria.

(b) Minimizes changes.

(c) Ensures adequate justification for replacements and consistent information to satisfy requirements.

(d) Minimizes changes in shipping destinations.

#### 1.7.4 **Claimant**

a. Budget for operation and maintenance of equipment.

b. Process and forward all approval requests for Class "A" assignments, (Command and Control vehicles and midsize/large Sedans), Home-to-Work assignments, Mass transportation, and requests for vehicle marking exemptions.

#### 1.7.5 **Shore Activities**

a. Review and submit CESE procurement requirements in accordance with detailed guidance in paragraph 2.8.

b. Manage transportation equipment in accordance with this publication.

c. Review and revise inventory objectives on a continual basis consistent with mission accomplishment.

#### 1.7.6 **Deployable Units**

a. Manage transportation equipment in accordance with this publication and appropriate subordinate instructions.

b. Review Required Operational Capabilities (ROC) and Projected Operational Environment (POE) statements on a continual basis and provide Allowance Change Requests (ACRs) as outlined in NAVFACINST 11200.35 series.

1.8 **Support of Marine Corps Forces**. The Navy is responsible for providing official use transportation support to Marine Corps security forces assigned to naval activities to the extent necessary to accomplish on-station security services. This does not include vehicles for administrative, training or other USMC support functions.

1.9 **Naval Supply Systems Command**. The Naval Supply Systems Command (NAVSUPSYSCOM) has the responsibility to procure and administer the assignment and utilization of all materials handling equipment (MHE) in accordance with requirements established by CNO and commands. MHE is usually maintained in transportation equipment shops. Inventory objectives and excess materials handling equipment shall be processed in accordance with NAVICPINST 10490.4.

1.10 **Transportation Management Assistance Visits (TMAVs)**. On-site activity analysis of the administration, operation, and maintenance of transportation equipment is made by TEMC representatives. The objective of the assistance visit and analysis is to assist the activity in technical and management procedures that shall improve the efficiency and effectiveness of their overall transportation equipment operation. In general, these assistance visits should include review and validation of transportation equipment inventory objectives, utilization, requirements, operations, and maintenance. SOU/NCTC TMAVs are coordinated with NFELC Port Hueneme. NCF units shall receive TMAVs (MAV, TAV, or DMI) in accordance with current NCB directives. The following items/data, as a minimum, shall be available to the assistance visit team.

- a. Inventory records.
- b. Preventive maintenance schedules.
- c. Accident reports.
- d. Current "B" assignment justifications.
- e. Utilization data, including mileage targets and criteria for each assignment.
- f. Approval letters for leases, waivers for alternative fuel vehicles, command and control, and non-standard security vehicles.
- g. Vehicle/Equipment history record files/jackets.

- h. Current FAST reports.
- i. Dispatcher logs, Trip Tickets, Bus/Taxi logs and schedules.
- j. Copies of latest I.G., TMAV, and Fire and Emergency Service reports.
- k. Copies of all intraservice support agreements citing transportation support.
- l. Approval letters to retain CESE when in excess of inventory objective.
- m. Activities compliance with Navy AFV policy, for acquisition of AFVs and for reduction of petroleum fuel use.

1.10.1 **Coordination with Fire Department.** As part of the transportation assistance visit, a meeting with the Transportation Director and the Fire Department Chief shall be arranged to discuss items of mutual interest. At Naval Air Stations (NAS), particular attention shall be given to the status and condition of Aircraft Rescue and Fire Fighting (ARFF) equipment, crash cranes, and other related runway support equipment.

1.10.2 **Frequency and Reporting.** Transportation Management Assistance Visits (TMAVs) should be conducted at 24-month intervals for activities operating 50 or more units of transportation equipment unless otherwise directed by the Claimant. A briefing of the visit analysis and findings shall be offered to the Commanding Officer of the activity visited prior to departure, and shall include items of major concern. The visit results shall be summarized in the form of a one-page Executive Summary. A written report shall be forwarded to the activity as soon as possible after the completion of the visit. Priority shall be given to activities where the potential for cost savings is the greatest. At activities operating fewer than 50 units of transportation equipment, the analysis may be conducted every 3 years, as a minimum, or when assistance is specifically requested.

1.11 **Intra-Service Support Agreements.** Navy policy, in accordance with OPNAVINST 11000.16, is to combine full transportation support services in a geographic area under one main PWC/PWD wherever feasible. Intra-Service Support Agreements or Memorandums of Agreement provide in detail the arrangements made between the host and tenant. Where an activity has an authorized inventory objective, and desires to receive support from the major geographical Public Works Center (PWC) or Public Works Department (PWD), the host activity should request assistance from its TEMC to coordinate the transfer. The TEMC shall obtain the concurrence of all concerned parties, and establish a time frame for the transfer based on budgeting/programming requirements for both activities.

1.12 **Official Use.** The use of all Navy-owned and controlled motor vehicles shall be restricted to official purposes only. The term "official purposes" means that a person must perform travel in their official capacity. This precludes the use of Government vehicles for personal use. The purpose of the trip must be related to the performance of official duties or in connection with activities conducted under official authorization.

1.12.1 **Legislative Constraint.** In accordance with Section 1344 of Title 31, U.S. Code, "official purposes" shall not include transporting officers or employees of the Government between their residences and places of duty/employment. The same statute exempts from this limitation any motor vehicle for the official use of the President, the heads of executive departments enumerated in Section 101 of Title 5, U.S. Code or principal diplomatic and consular officials.

a. **Exemptions**

(1) Officials listed in Appendix A of the DoD 4500.36-R are specifically authorized by law to receive transportation between residence and place of employment.

(2) **Field Work.** Home-to-work (H-T-W) transportation may be authorized for those employees performing fieldwork when approved, in writing, by SECNAV (nondelegable). Fieldwork is official work performed by an employee whose job requires attendance at several locations that are at a significant distance from the person's place of employment. Some examples of fieldwork are recruiters, auditors, and medical officers on out-patient service. The assignment of an individual to a position that is determined to be fieldwork does not, of itself, entitle that individual to receive daily home-to-work transportation. When authorized, such transportation should be provided only on days when the individual actually performs field work, and then only to the extent that such transportation shall substantially increase the efficiency and economy of the Government. Individuals are considered "in field work" when they do not report regularly to the same post before proceeding to perform their official duties. Persons who report to a regular office before embarking on their daily work are not engaged in fieldwork within the definition; they may be entitled to Government transportation from their post to places in the field where their duties may require their presence, but they would not be entitled to transportation between their residence and post.

(3) Personnel may be authorized home-to-work transportation when it is considered essential for the safe and efficient performance of intelligence, counterintelligence, protective services, or criminal law enforcement duties, when approved, in writing, by SECNAV (nondelegable).

(4) Other personnel may be authorized home-to-work transportation by SECNAV (nondelegable) when highly unusual circumstances present a clear and present danger, an emergency exists, or other compelling operational considerations make such transportation essential to the conduct of official business.

**1.12.2 Operation of Motor Vehicles by Personnel on Official Travel (TDY/TAD).**

Civilian and military personnel while in an official travel status (TDY/TAD) can operate government owned or leased vehicles for official business without an OF-346 provided they possess a valid state license for the type and class of vehicle they are to operate and their travel orders authorize the use of a vehicle. All travelers are reminded that government owned or commercial lease/rental vehicles are to be used for "Official Business" only. The Joint Travel Regulations (JTR) (Volume 2, Chapter 2, paragraph C2050 and C2102) allow the following:

Use of government-owned vehicles and special conveyance (rented vehicle) is limited to official purposes including transportation to and from duty sites, lodgings, dining facilities, drugstores, barber shops, places of worship, cleaning establishments, and similar places required for the traveler's subsistence, health or comfort.

**Note:** A government-contract rental automobile is the first resource for short-term rental of an automobile by an employee on TDY travel. A Government-furnished automobile is the first resource when an automobile is required for official travel performed locally or within commuting distance of an employee's designated post of duty. See JTR , Volume 2, Chapter 2, paragraph 2001 for additional guidance.

**1.12.3 Deployed Forces.** The JFTR (Volume 1) states that "When scheduled government bus service operated by host activity or public bus service is not available or its use is impractical, deployed personnel may use vehicles to attend to uniform needs, to obtain suitable meals, to obtain hair cuts, and for transportation to similar places required for the sustenance, comfort, and health of deployed personnel."

**1.13 Individual Home-to-Work Transportation Approval Procedures**

1.13.1 Requests for authority to provide Government-owned vehicles to officers or government employees engaged in intelligence work or fieldwork shall be submitted with full justification to SECNAV via the chain of command. These authorizations shall be updated and approved annually.

1.13.2 Requests for individual home-to-work (H-T-W) transportation (domicile to duty) for highly unusual circumstances (a clear and present danger, an emergency, or other compelling operational consideration) are to be approved by SECNAV (nondelegable), in writing, and are to be reviewed/renewed by SECNAV every 90 days.

1.13.3 In areas outside of the United States, Unified Combatant Commanders may, in accordance with 10 U.S.C. 2637, provide government transportation for certain members of the Uniformed Services, other Federal employees, and the dependents of such employees, provided that local transportation is unsafe or unavailable for whatever reason (e.g., terrorist activity, strikes, natural disasters, etc.)

- a. The initial transportation authorization shall not exceed 90 days.

b. If the conditions for the authorization persist, the Unified Commanders may extend the authorization for vehicle use for additional specific time periods.

c. All approvals and the reasons for such authorization shall be in writing.

d. The approving commander shall ensure that records are maintained on the transportation provided under this authority.

1.13.4 **Logs for Individual H-T-W Assignments.** Logs/records shall be maintained locally for a minimum of three years to establish that all H-T-W transportation was used for official purposes. The requirement for logs to record H-T-W transportation applies equally to all categories of individual exceptions. The logs or records should be easily accessible for audit and contain the following information:

- Name and/or Position Title
- When and where transportation was provided
- Duration and Circumstances
- Passenger carrier identification (USN Registration No.)
- Name of person who authorized transportation

1.13.5 **Transportation Between Residence and Place of Employment.** This shall not be provided solely because of the applicant's being on call constantly, or because they must be prepared to leave at any moment in the event of an emergency.

| 1.13.6 **Temporary Duty (TDY) Related to H-T-W Transportation.** TDY is governed by the JTR ,Vol II, Chap 4, para 4458. It states:

"Temporary duty travel by publicly owned conveyance (POC) may be authorized as well as approved from home or domicile to a place of temporary assignment and return without requiring the employee to report first to his headquarters or regular place of duty. In authorizing such travel, the travel-directing official considers the interests of the Government with regard to mission requirements, relative expense, and practicability." *Paragraph 2001 states "travel of an employee is by the most expeditious means of transportation practicable and is commensurate with the nature and purpose of the duties involved. The official directing travel is responsible for the mode of transportation selected."*

This also applies to personnel proceeding directly from their residence in a government-owned or leased vehicle. If a traveler is being allowed to take a Government-owned or leased vehicle home and to proceed on TDY travel directly from his or her residence, the approval shall be included in the official travel authorization (See JTR Vol 2, para 2102).

1.13.7 **Command and Control Vehicle Assignments.** Command and control vehicles do not come under the H-T-W reporting requirements of U.S. Code 31, Section 1344 (as amended by PL 99-550). This type assignment is discussed in Chapter 2.



1.13.8 **Group H-T-W Transportation.** Group H-T-W transportation services also do not come under the H-T-W reporting requirements of U.S. Code 31, Section 1344 (as amended by PL 99-550). This service is discussed in Chapter 3.

1.14 **Illegal Use Penalty.** Penalties for willfully using, or authorizing the use of a Government-owned or leased motor vehicle, for other than official purposes, are stipulated in U.S. Code 31, Section 1349. In extreme cases, U.S. Code 18, Section 641 may apply. U.S. Code 31, Section 1349 (b), Adverse personnel actions, (Public Law 97-258, Sep 13, 1982) states: "An officer or employee who willfully uses or authorizes the use of a passenger motor vehicle or aircraft owned or leased by the United States Government (except for an official purpose authorized by Section 1344 of this title) or otherwise violates Section 1344 shall be suspended without pay by the head of the agency. The officer or employee shall be suspended for at least one month, and when circumstances warrant, for a longer period or summarily removed from office." ("Passenger motor vehicle", relative to illegal use, has been interpreted to mean all types of automotive vehicles.)

1.15 **Use of Government Vehicles in the National Capital Region.** Special instructions describe the policy and procedures for use of Government vehicles in the greater metropolitan area of Washington, D.C., generally referred to as the National Capital Region. Included in the National Capital Region program are the Navy Department motor pool, bus service between various agencies, and certain other official transportation functions. Details are available in SECNAV Instruction 11240.17.

1.16 **Permissible Operating Distance (POD).** It is usually more economical to use the services of commercial carriers for the transportation of personnel and cargo to destinations outside the immediate area of an activity. A one-way distance of 100 miles has been selected as a guide to base permissible operating distances for motor vehicles. The POD established for an activity should be sufficient to support normal operations. Based on installation experience, a POD shall be established which shall adequately support the installation's motor vehicle transportation requirements. For transport of material, refer to NAVSUP Manual, Volume 5, Part E. The 100-mile guide shall not be exceeded without written authorization and justification signed by the activity commanding officer or individual assigned signature authority.

1.17 **Mutual Assistance and Cooperation.** In the interest of good transportation operations, it is the responsibility of an activity transportation department to render assistance to other Naval Activities when their equipment experiences breakdowns/difficulties while on extended operations. Reimbursements for labor and material costs incurred shall be charged in accordance with applicable Office of the Assistant Secretary (Financial Management & Comptroller), Office of Budget (FMB) accounting procedures. Assistance rendered includes, but is not limited to: providing emergency repairs/maintenance; fuels, oils, lubricants or towing service.

## CHAPTER 2. ADMINISTRATION

### 2.1 Assignment.

2.1.1 General Assignment Criteria. Transportation equipment shall be assigned only to those shore activities that have approved inventory objectives (IOs) and those deployable units that have a CNO approved Table of Allowance (TOA). CESE shall be supplied through new procurement, rental or lease or by redistribution of excess equipment. This includes vehicles acquired through the General Services Administration (GSA) under the Interservice Support Agreement (ISSA) between the Navy and GSA. The agreement specifies that the GSA Fleet provide basic GSA fleet services, motor vehicles and replacements, maintenance and repairs, and other petroleum products to the Navy on a reimbursable basis (fixed monthly rental and mileage rate). Only that transportation equipment needed to accomplish the stated mission shall be assigned to a naval activity. Periodic assessments shall be made by the TEMCs to determine if adjustments are needed due to mission changes or new taskings. Each activity shall:

- a. Provide maximum pooling of administrative use vehicles.
- b. Establish procedures for assignment and use of vehicles.
- c. Establish central dispatch points for management and control.
- d. Periodically review requirements and make reassignments to satisfy changing conditions.
- e. Provide the most economical use of manpower and equipment.
- f. Provide the collection of operational data as a basis for inventory/inventory objective actions and cost performance reporting.
- g. Provide training for personnel.
- h. Ensure the safety, security, and authorized use of equipment.
- i. Rotate vehicle assignments, where practical and economical, to equalize equipment usage.
- j. Select the most economical equipment for mission accomplishment.

2.1.2 Assignment Controls. Vehicle assignments shall be based on the following categories.

- a. Class A - Continuing Assignments. For Navy purposes, a Class A assignment is defined as the full-time assignment of a specific nonstandard vehicle (i.e., midsize/large sedan or command and control vehicle) to an individual billet.

**Note:** Personnel authorized Class A assignments shall not use these vehicles for other than the actual performance of official duties. Class A assignments neither provide nor change vehicle inventory objectives, are not authorizations for "home to work" unless specifically authorized, and are not to be construed as prestige assignments nor as waivers of marking and identification requirements established by law. With the exception of Class IV and Executive vehicles, Class A assignments must be individually. Requests for these assignments shall be forwarded to CNO for approval, via the command chain and the responsible TEMC with a copy to NAVFAC (Code PWT).

(1) Class IV (Large) Sedan Assignments. The use of Class IV (large) sedans is limited to those officials specifically authorized full-time assignment of a Class IV sedan by the Secretary of Defense, identified in paragraph 3-1.d of DoD 4500.36-R. Further approval by CNO is not required.

(2) Class III (Midsize) Sedan Assignments. The full-time assignment of a Class III (midsize) sedan may be authorized when CNO has determined that a Class III sedan is essential to the accomplishment of the mission.

(3) Command and Control Vehicle Assignments. Radio-equipped, emergency-configured (command and control) vehicles may be provided on a 24 hour-a-day basis to commanders who live on the military installation, who are charged by the head of the military department concerned with the overall responsibility for installation security and/or operational functions, and who cannot adequately discharge their responsibility without 24-hour mobility and communication capability. Appendix C of the DoD 4500.36-R provides a checklist for authorizing command and control vehicles.

(4) Executive Vehicles. The use of executive vehicles (individually assigned vehicles with chauffeurs) is limited to those authorized by SECNAV vice CNO. Additional assignments for executive sedans are not authorized. These authorizations, however, can be reassigned within the claimancy.

b. Class B - Recurring Dispatch Assignments. A Class B assignment is the assignment of an automotive vehicle authorized in writing by the local Commander, or the Commander's designee, to an organizational unit of the Command or a tenant activity on a regular or continuous basis for the conduct of official business. Commanding Officers can restrict the use of a Class B assignment to an individual billet or to expand its uses to meet changing requirements within the organization. A Class B assignment should be considered when requirements cannot be met by use of pool equipment, other types of available transportation, or is shown to be the most cost effective alternative. Certain exceptions may be made for unusual operating conditions; however, the exceptional conditions must be real and not merely so described to avoid the use of pool vehicles (Class C assignment).

The Transportation Director shall conduct Class B reviews at least annually to ensure vehicles are not being used on a convenience basis and are actually required to efficiently support the conduct of official business at the activity, office, or department to which it is assigned. A letter sent to the customers, requesting them to validate requirements, is not considered a review. The reviews are best accomplished by doing

a face-to-face dialogue with a set number of customers each month rather than trying to review all customers in a three or four day time frame. Once accomplished, the Public Works Officer or designated representative shall approve the Class B assignments. Assignments on a Class B basis shall not be made if it is practical to use pool vehicles.

c. Class C - Pool Vehicles. All DoD motor vehicles not designated as Class A or Class B assignments shall be pooled for performance of services on an on-call basis. Maximum pooling of vehicles at all levels within a naval activity is to be emphasized. The Transportation Director shall review Class C pool requirements annually and ensure an economic mix of vehicles is maintained for mission support.

d. TEMC Evaluation of Class A, B and C Assignments. The TEMCs shall review and validate Class A, B and C assignments during assistance visits and evaluate the feasibility of alternatives, including evaluation of a radio-controlled taxi system or shuttle bus service, to satisfy requirements for movement of personnel and material in lieu of maintaining vehicles in a Class B assignment category. This review shall include a thorough review of CESE assets in Alpha Codes O-Z, with a written recommendation to retain in-house or outsource, whichever is more practical. See paragraph 3.6 on utilization requirements.

### 2.1.3 **New Transportation Equipment Assignment**

a. Light Vehicles. To achieve maximum warranty benefits, new light vehicles should be assigned to those organizational segments of a naval activity where there is the greatest likelihood of accumulating high mileage and maximum use. In general, this means that new vehicles should be assigned on a Class C basis for pool operation, and on a Class B basis to those segments of the naval activity where essential vehicle trips consistently operate beyond the immediate vicinity and result in high mileage.

b. Buses. Bus service can be provided at an activity when it shall result in economical transportation. Class B assignment of buses is not recommended. To assure maximum use, the passenger capacity of the bus or buses assigned should, within reasonable limits, equal the maximum number of passengers to be transported at peak loading periods. To handle peak traffic or short hauls, increased frequency of trips is suggested rather than the assignment of additional buses. Generally, in order for a bus operation to be efficient, service should be provided on a schedule of not more than 20 minutes waiting time between trips. The schedule must be maintained during hours of normal service and supplemented as necessary during peak periods. See section 3.3 for additional details on bus service. Chapter 5 of DoD 4500.36-R also provides detailed information and policy on bus services.

c. General-Use Trucks. In determining the need for a truck configured to transport cargo or materials, the following factors shall be considered.

- (1) Truck size and type shall correspond to type of work being done.

(2) As practicable, an assigned truck shall be required for a minimum operation of 4 hours a day.

(3) The criteria stated in 2.1.2 for Class B and Class C vehicle assignments apply to the assignment of general-use trucks. Information on equipment is provided in the Construction Automotive and Specialized Equipment Management Information System (CASEMIS) descriptive reference table.

d. Special Use Vehicles. The general-use truck criteria does not apply to trucks with special mounted equipment, such as lubricating equipment, welding machines, compressors, and refrigerating units. Requirements for special use vehicles shall be based on activity needs for field services. Trailer-mounted rather than truck-mounted equipment shall be used wherever feasible.

e. Construction and Railway Equipment. Only sufficient construction and railway equipment shall be assigned to a naval activity to adequately carry out its stated mission. Subsequent and continuing determination and justifications of requirements shall be based on analyses of equipment utilization by the naval activity. Information on equipment selection may be found in the CASEMIS descriptive reference table. Short-term rental in lieu of ownership shall be considered in cases of low utilization.

f. Grounds Maintenance Equipment. Equipment used for grounds maintenance, regardless of horsepower, shall not be centrally managed or procured using OPN funds, for example lawn mowers and tractors used for grounds maintenance.

**2.1.4 Assignment to Ships and Afloat Commands**. The designated shore activity is tasked to provide transportation support to ships and afloat commands on a priority basis. Vehicular support for ships and afloat commands is provided from class C pools administered by the designated shore activity, or by hire arrangements authorized and funded by the Commander, Atlantic Fleet and the Commander, Pacific Fleet. CINCLANTFLTINST 11240.3 and CINCPACFLTINST 11200.3, provide guidance and direction regarding automotive vehicles and equipment inventory objectives for ships and afloat commands in the Atlantic and Pacific Ocean areas, respectively.

a. Shore Activities Serving In-port Fleet Units

(1) By furnishing transportation equipment to ships and afloat commands, activity Class C pools essentially eliminate the need for carrying vehicles on board ships except where emergency and specialized type vehicles are required.

(2) Activities assigned ship support responsibilities shall provide transportation equipment to ships and afloat commands in accordance with inventory objectives authorized by the Fleet Commanders-in-Chief.

(3) When the requirements of ships and afloat commands within authorized inventory objectives exceed the quantity of vehicles and equipment available in the activity's C pool, vehicles assigned to shore activities and departments shall be withdrawn to support the requirements, or arrangements for commercial hire shall be made by the shore activity to fulfill the afloat needs. Commercial hire shall not be used until every effort has been made to reassign Navy-owned vehicles to meet the requirements.

(4) Transportation equipment for ships, afloat, and shore activities shall be replaced at the discretion of the Transportation Manager.

(5) Vehicles assigned to Class C pools for Fleet support shall be used for daily requirements of the shore activity, provided Fleet vehicle requirements are fulfilled.

(6) Ships in the Reserve Fleet, being reactivated, shall obtain vehicle support from the designated support activity at the berthing area.

(7) Vehicles and equipment required to support ships under construction and repair shall be provided by the designated support activity.

2.1.5 **Assignment to the NCF, NCTCs and SOUs.** Organic allowances are designed to support a unit's mission as defined by that unit's ROC and POE. An organic equipment allowance enables a unit or activity to carry out most operational requirements. Organic allowances are not designed to meet every operational requirement.

2.1.6 **Temporary Assignment or Loan.** An IO/allowance holder may authorize the temporary loan (normally limited to a maximum of 90 days) of CESE when such action is in the interest of economy, efficiency, or military necessity. Before loaning equipment, a mutual loan agreement shall be made which defines maintenance, repair, and damage responsibility by the lending and borrowing activities. It shall be signed by a Commissioned Officer and a joint inspection shall be performed both at the time of the loan and at the time of return of the equipment. Further information that concerns loan agreements can be found in (DoD 4500.36R) *Management, Acquisition and Use of Motor Vehicles*. Temporary loans may be authorized between the following types of activities:

a. Other Navy and U.S. Military Activities. Only activity authorization is required for the temporary loan of transportation equipment to other Navy and U.S. military activities when such action is the most economic, efficient, in the best interest of the government and in the immediate vicinity of the loaner. In all other instances, TEMC approval is required.

b. Civilian Agencies of the Federal Government. The loan, assignment, or transfer of administrative use vehicles shall not be made to any non-DoD Federal agency without prior approval from COMNAVFACENGCOM (may be delegated to the TEMC).

c. Combat Area Loans. Loan of vehicles to any nonmilitary Federal agency or any agency administering U.S. government contracts in a combat area can be authorized by the Commanding Officer of the lending activity, provided the loan is considered to be in the best interest of the government.

d. Assignment, Lease, or Loan of Transportation Equipment for Public or Private Civilian Use. Numerous laws pertain to the assignment, loan, or lease of government-owned transportation equipment for public or private civilian use. Generally, authority to loan or lease transportation equipment for private civilian use shall be given only when the loan/lease shall promote the national defense or be in the public interest. The legal authority for a loan/lease shall be determined, after a thorough review of the specific circumstances, by the legal council of the Command/Activity concerned. Assistance, if needed, can be obtained from the legal council located at the responsible EFD/TEMC.

2.1.7 **Assignment of Courtesy Vehicles.** Activities shall not accept the use of courtesy vehicles (provided free of charge) from any private vendor. The vehicle transportation requirements of the Navy are to be satisfied by Navy-owned or authorized hired assets only.

2.1.8 **Assignments for Emergency and Disaster Purposes.** Commanders charged with area coordination responsibilities have the authority to override assigned responsibilities of other commanders where emergency or disaster situations arise, or when operational considerations involving the provision of effective support to the operating forces of the Navy clearly demand such action. In exercising such authoritative direction, the area coordinators concerned assume full responsibility for their actions and shall promptly inform other responsible commanders of the action planned or taken. (SECNAV Instruction 5400.14)

2.1.9 **Assignment to Commissaries, Exchanges, and Messes Ashore.** The assignment of vehicles to commissary stores, Navy exchanges, messes, and similar Morale, Welfare and Recreation functions ashore shall be based on the premise that vehicles are not to be assigned for the exclusive use of any division of an activity (special use vehicles excepted) unless the volume of work performed by the vehicle is sufficient to make the assignment economically justifiable. Navy-owned vehicles procured with appropriated funds may be assigned to these activities if available and the circumstances justify. The general policy of vehicle assignments to commissaries, exchanges, and messes ashore is shown in Figure 2-1. Commissary store vehicles are procured with Commissary Store Reserve Funds as required to meet the needs of specific store activities. The funds used to support the initial procurement cost, maintenance, and operation of commissary store vehicles are expended from the Navy Stock Fund.

2.1.10 **Assignment to Nonappropriated Fund Activities.** The general policy of vehicle assignments to nonappropriated fund activities is contained in Figure 2-1. Further guidance is as follows:

a. **Excess Personal Property.** Nonappropriated fund activities may obtain excess personal property for administrative purposes in accordance with the Defense Disposal Manual (DoD 4160.21M). In the case of foreign excess, which is not reportable to GSA, such foreign excess personal property should be available to nonappropriated fund activities during the normal local area screening periods in accordance with the Defense Disposal Manual, and under such controls as may be prescribed by the area or theater commanders. Nonappropriated fund activities may likewise obtain excess property located in the U.S. during the same period that such property is available to other Federal Agencies.

b. **Assignment to Morale, Welfare and Recreation (MWR).** MWR may be permitted intermittent free use of Navy-owned vehicles, when available, for official recreation use only when approved in writing by the Commanding Officer. MWR also operate recreation vehicles purchased from nonappropriated fund accounts. The nonappropriated fund policies and procedures for the administration, operation, and maintenance of vehicles owned by MWR are contained in the MWR Manual (NAVPERS Instruction 1710.11).

## 2.2 **Inventory Objectives (IOs)/TABLES OF ALLOWANCES**

2.2.1 **General Provisions For IOs.** IOs represent the most efficient mix of Equipment Code quantities needed to perform the activity's mission as agreed to by the TEMC and activity. IOs shall not include quantities for maintenance float, pipeline, or depot stocks. To avoid duplication of IOs, the Public Works Center (PWC) or Public Works Department (PWD) shall be assigned the IO when Class B service is provided to a tenant or smaller activity.



## **GENERAL POLICY OF VEHICLE ASSIGNMENTS TO MORALE, WELFARE AND RECREATION**

<b><u>Type of Activity</u></b>	<b><u>Responsible Agency</u></b>	<b><u>General Policy</u></b>
Navy Exchange	NAVSUP *	1. Owns, operates and maintains vehicles from profits. 2. When available, may use Navy-owned vehicles on a reimbursable basis: emergencies, full not assignment not required, procurement funds not available. 3. May rent or charter vehicles commercially, using nonappropriated funds.
Commissary Stores	NAVSUP *	1. Generally owns equipment. 2. May utilize activity assigned vehicles, when available, on a reimbursable basis.
Ship's Stores	NAVSUP	1. Owns no equipment 2. May utilize activity assigned vehicle when available, on a reimbursable basis. 3. May rent or charter vehicles commercially using nonappropriated funds
MWR Division (Afloat)	BUPERS *	1. May own, operate, and maintain vehicles from (ashore) nonappropriated recreation funds. 2. Free use of Navy-owned vehicles within activity IO and funding availability is permitted for the purpose of carrying out officially scheduled and sponsored (group) welfare and recreations activities in accordance with the provisions of DoD 4500.36-R. 3. May hire Navy-owned buses on a reimbursable basis, where commercial charter services were not available. The hire or use of Navy-owned vehicles for personal recreation is not permissible. 4. May rent or charter vehicles commercially, using nonappropriated funds.
Messes (Ashore)	BUPERS *	1. May own, operate and maintain vehicles from nonappropriated funds. 2. Free use of Navy-owned vehicles is permitted for official business of the mess when approved by the Commanding Officer. 3. May hire Navy-owned vehicles for mess-sponsored (group) recreation on a reimbursable basis, where commercial vehicles are not available or adequate. 4. May rent or charter vehicles commercially using nonappropriated funds.
* <b><u>Reimbursement.</u></b> Labor and material costs incurred by the owning activity for its vehicles (and drivers when provided), which are assigned to the above types of activities, shall be charged to the activities in accordance with the accounting procedures under which the owning activity is operating, as prescribed in the FMB Manual.		
<b><u>USN Registration.</u></b> All vehicles owned by the above activities, or acquired by them for excess personal property listings of the Military Services or any agency of the U.S. Government shall be identified by USN registration numbers in the 4XXXX series. Paragraph 2.10.3 prescribes procedures for requesting the assignment of USN registration numbers for nonappropriated fund vehicles.		

Figure 2-1.

a. Applicable. These procedures are applicable to all Navy Shore Activities, NWCF and non-NWCF that hold approved CESE IOs and to unified commands whose headquarters receive Navy support.

b. Not Applicable. These procedures are not applicable to ships and afloat commands, fleet commanders having headquarters and support activities ashore, shore activities receiving CESE support from a Public Works Department/Center, Marine Corps Air Stations, deploying Marine Air units, or the Naval Construction Force. Ship and afloat commands derive transportation equipment support from the shore activity designated as their homeport. It is the responsibility of the homeport shore activity to provide IOs for ships and afloat commands in accordance with applicable CINCPACFLT/CINCLANTFLT instructions relating to the number of vehicles authorized.

2.2.2 **Procedures For IOs**. The TEMC shall review activity transportation equipment IOs for shore activities on a continuing basis and shall also review and validate IOs during management assistance visits. As changes in mission, new functions, and/or functional transfers occur, the activity IO shall be revised. The IOs shall be based on the minimum number of units required to accomplish the activity's mission.

a. Vehicles Excess to IO. CESE is received at an activity to replace current inventory or to fill an unfilled IO and is not to be retained when excess to IO. When new or used CESE is received at an activity to replace current inventory, a reasonable period of time is allocated for the changeover to report excess and process paperwork before transferring equipment to disposal.

**Note:** In certain situations, items excess to IO could be required and may be retained for a limited period of time. These situations shall be fully documented, approved by the TEMC, and kept on file at the activity. Examples of such situations include: On-hand assets are of less capacity than IO items, so additional units must be retained until IO items can be procured (i.e. two 5 ton dump trucks substituting for one 10 ton dump truck); a short term need that must be met, but where an IO change would not be required (less than one year duration). In each such case, authorization for retention of excess vehicles shall be obtained from the TEMC in writing. The TEMCs are to review these temporary approvals during TMAVs.

b. Fire Fighting IOs. Requests for Fire fighting IOs shall be sent to the TEMC via the Director of Navy Fire and Emergency Services for review and approval, with copies to the Regional Commander and the major claimant.

c. Railway Equipment IOs. Railway equipment IOs shall be reviewed, consolidated, and coordinated by each TEMC. The TEMCs are responsible for inventory objective management, redistribution, transfer, and disposal of railway equipment in their own geographic region. The overall administration of railroad operation within the Navy shall be in accordance with NAVFAC P-301.

2.2.3 **COMNAVFACENGCOM IO Review/Approval.** COMNAVFACENGCOM shall use the CASEMIS summation of activity IOs for higher level reporting requirements.

2.2.4 **Tables of Allowances (NCFs/SOUs).** CESE Allowances are a part of Tables of Allowance, which are approved by the Chief of Naval Operations (CNO) and are published biennially as a COMNAVFACENGCOM notice.

a. CESE Allowance Review and Update is accomplished by a Biennial Allowance and Requirements Review (BARR). The BARR is used to recommend changes to a Command's CESE allowance and to indicate which vehicles require replacement. Biennially, each allowance holder or designated component organization prepares and submits a BARR in accordance with NAVFACINST 11200.35, Naval Construction Force Biennial Allowance and Requirement Review. Requests for allowance increases must be accompanied by complete justification based upon mission change and operational procedures and requirements changes. When allowances are increased, maintenance funds and personnel must also be increased. Serious consideration should be given to minimizing CESE allowances so that requirements for funds and personnel can be reduced (see Appendix C).

(1) **Prepositioned War Reserve Material Stock (PWRMS).** Within PWRMS is Advanced Base Functional Components (ABFC), which are quantities of material and equipment acquired and positioned against a war requirement. PWRMS and ABFCs ensure timely support of designated forces or specific projects during the initial phase of war or to perform a specific CNO-approved mission.

(2) **Naval Construction Force Support Units (NCFSUs).** When an assigned project requires more equipment than the organic allowance, the responsible Fleet or Operational Commander supplements it. The most common form of support equipment is that held by an allowance holder for issue to sub allowance holders. The NCFSU provides this capability to COMSECONDNCB and COMTHIRDNCB for support of NMCBs. NCFSU equipment is normally tailored to specialized tasks such as large volume earth-moving, rock-crushing, concrete and asphalt production and long haul trucking operations.

b. **Emergency CESE Requests.** Each allowance holder should anticipate all needs during the BARR so that interim CESE requests shall not be necessary. However, should an urgent situation arise, an allowance request may be submitted by letter to NFELC Port Hueneme, Code 1575, via the chain of command. The request letter must contain full justification for the change, fully explain the requirements for the EC involved, state the issue priority designator, required delivery date, and it should explain how the current annual requirements submission should be adjusted to best accommodate the priority of the request. The ability of NFELC Port Hueneme to fill such requests shall depend on the availability of suitable CESE from other resource areas and the status of procurement programs at the time the emergency request is received.

## 2.3 **Budgeting**

2.3.1 **Investment.** COMNAVFACENGCOM is responsible for investment budgeting for the Navy-wide procurement of Civil Engineering Support Equipment (CESE) at appropriated fund activities using Other Procurement, Navy (OPN) funds. Individual CNO Resource Sponsors program resources via the POM process commensurate with initial outfitting and CESE replacement requirements. NAVFACENGCOM also budgets for passenger-carrying vehicles to support Navy Working Capital Fund (NWCF) activities. Other NWCF CESE requirements are provided through the Capital Purchase Program (CPP) where the investment cost exceeds \$100,000. CESE requirements under \$100,000 are funded using NWCF Operation and Maintenance, Navy (O&MN) funds. See paragraph 2.8.4 for further details regarding NWCF procurement.

For NCFs/SOUs, NFELC Port Hueneme analyzes equipment requirements, recommends proper allowances, and coordinates all CESE procurement. NAVFACENGCOM programs and budgets for initial outfitting of each approved CESE allowance, procurement of new allowance items, and CESE replacements. The following factors are used to determine the number and types of CESE to be procured: projected requirements (BARR), procurement lead time, budget constraints, and priorities levied by NAVFACENGCOM, Fleet Commanders, and certain other second echelon Commanders.

2.3.2 **Expense.** Claimants are responsible for budgeting operation and maintenance costs of transportation equipment.

2.4 **Material Manager.** COMNAVFACENGCOM has been assigned responsibility as the centralized single material manager for the Navy for all automotive vehicles, construction, and railway equipment procured by the Navy. Consolidated procurement is accomplished by the designated procuring agencies. COMNAVFACENGCOM is the inventory manager for 2C cognizance material, which includes CESE, and Civil Engineer End Items (CEEI). The NFELC Port Hueneme provides centralized management for 2C material. In addition to CESE and CEEI, there are a variety of items also considered 2C Cog items including, but not limited to, decontamination units and automatic chemical agent alarms, chemical agent detector kits and refills afloat and ashore; material and appliances for defense ashore against chemical, biological, and radiological warfare, except instruments for detection and measurement of radioactivity; and all industrial equipment (typically, non-portable ship equipment that costs more than \$1,000).

2.4.1 **Prior Approval for Procurement.** Except for NWCF activities, CESE shall not be procured or otherwise acquired for Navy ownership by any activity, office or command without prior approval of COMNAVFACENGCOM. The purchase of passenger-carrying vehicles (PCVs) (sedans, station wagons, buses, ambulances, carryall vans, and SUVs) for use by the Government is controlled by law and shall only be purchased or procured with OPN funds administered by NAVFACENGCOM. The restriction on procurement of PCVs also applies to NWCF customers. Annually, Congress (through appropriation acts) specifically authorizes the quantity of passenger-carrying vehicles to be acquired, and establishes a maximum unit cost for sedans and station wagons. See paragraph 2.3.1 and 2.8.4 for guidance on NWCF procurement.

2.4.2 **Transfers of Equipment by Shore Activities.** All equipment transfers shall be authorized and coordinated by the responsible TEMC.

2.4.3 **Transfers of Equipment by NCFs/SOUs.** For NCF/SOU units, approval is required from NFELC Port Hueneme via the allowance holder. After approval is granted, equipment must be prepared for shipment between units or to overhaul facilities to ensure its arrival in satisfactory condition. Disassembly shall be the minimum necessary to safeguard parts known to be subject to damage or loss, and to accomplish reduction in cube. Major disassembly shall not be accomplished without prior approval.

a. **Prepare Equipment for Shipment.** Prepare for shipment as follows:

(1) Inspect and operationally test the equipment. Repair and service the equipment as required. Service the equipment. Ensure that proper quantity of antifreeze is added, as applicable, to prevent freezing enroute. Prepare an Equipment Repair Order (ERO), described in Chapter 4 and list all required repairs not completed. File the ERO in the appropriate Equipment History Jacket so that the ultimate receiver shall have basic information about the vehicle's condition.

(2) Thoroughly clean the equipment. Protect components that may be damaged during cleaning with waterproof paper, plastic tape, or other suitable material.

(3) Close all windows and doors. Protect windows and windshields with plywood, masonite, or similar material. All exhausts, intakes, hydraulic hoses, and other openings must be sealed by capping, taping, or other means to prevent entry of water and dirt.

(4) Coat exposed ferrous metal-machined surfaces, such as hydraulic ram shafts and similar surfaces. Exterior surfaces of equipment being shipped to overhaul facilities are to be coated with corrosion preventive rust proofing. Appendix M lists approved preservation and rust proofing materials.

(5) Ship all collateral equipage with the equipment, and include the spare tire and rim, unless otherwise directed. Remove and box all items subject to pilferage such as mirrors, windshield wipers, lighters, tools, jacks, and all disassembled components. Mark the box with the USN number and secure to the equipment in a protected location so the box shall not interfere with towing, driving, or lifting the equipment.

(6) All attachments shall be shipped with the equipment, unless otherwise directed. Appendix D provides additional information. Small attachments such as bridles, pennants, hook blocks, and wire cable shall be boxed and secured to the equipment in a protected location so as not to interfere with towing, driving, or lifting the equipment. Large components such as backhoes, pile driver leads, clamshells, and dragline buckets that cannot be relocated on the equipment shall be shipped separate

from, but at the same time as, the non-rolling stock. These components are usually shipped loose unless handling conditions dictate otherwise. Components may then be secured to pallets or a skid-type base. Boxes, loose components, and palletized or skid-type loads shall be marked with the USN number of the basic equipment.

(7) Remove items or parts that have low ground clearance such as spray bars and long extensions, and secure to the upper portion of the vehicle.

(8) Block, brace or secure any movable component attached to the equipment with strapping, cable, or by other suitable means to prevent movement and damage during shipment.

(9) Drain and blow dry water tanks, pumps, piping, and other components that contain water to prevent freezing damage en route. Cover openings to prevent entrance of water.

(10) Cover equipment electrical components and instruments subject to damage by the elements with a waterproof shroud, plywood housing, or other suitable material.

b. Transfer Actions. After completion of the preparation for shipment, continue with the following:

(1) Mark the equipment for the consignee.

(2) Transfer the equipment to the appropriate Shipping Officer. The equipment should be stored at the staging area for the shortest time possible to reduce the possibility of deterioration, cannibalization, or theft.

(3) Ship the equipment by the first available transportation, unless otherwise directed. When possible check the equipment after it has been loaded and represerve and reseal any areas or openings disturbed by handling.

(4) Provide consignee with all shipping data, including USN numbers, number of items in shipment, name of ship, scheduled departure date, and estimated time of arrival at destination. Identify equipment attachments by NAVFACENGCOM identification number (Appendix D) and indicate the USN/USNG number to which it is assigned. Attachments shipped separately from its USN number shall be shipped under a separate Transportation Control Number (TCN) for accountability.

(5) For disposition of Equipment History Jacket refer to Chapter 4.

(6) After the item is shipped, the allowance holder must update CASEMIS in accordance with paragraph 2.12.7.

(7) Check CSC recertification date before shipping USNG numbered ISO containers. See Appendix D.

c. Shipment Under Combat Conditions. Additional guidelines for shipping equipment under combat conditions are provided in the *NCF Tactical Embarkation Manual*, COMTHIRDNCB/COMSECONDNCB Instruction 3120.1 series.

2.5 **Foreign Purchases.** The Federal Acquisition Regulation (FAR) permits foreign purchases under specific conditions such as unreasonable cost for domestic procurement and non-availability within the United States. Detailed procedures are contained in the FAR under Foreign Purchases. Additional restrictions may be contained in specific Congressional authorization and/or appropriation acts. When required, data for justification and approval (J&A) shall also be developed, and a J&A request forwarded to the applicable Command. LANTDIV coordinates procurement in Europe and PACDIV coordinates procurement in the Pacific Region. DoD implementation and supplementation of the FAR is issued in the Defense Federal Acquisition Regulation Supplement (DFARS) under authorization and subject to the authority, direction, and control of the Secretary of Defense.

2.6 **Acquisition of Fuel Efficient Vehicles.** Current laws and regulations require compliance in the fuel-efficient acquisition (purchase or hire) and reporting of passenger automobiles (sedans and station wagons) and light trucks with the exception of alternative fueled vehicles as detailed in section 3-4 of the DoD Regulation 4500.36-R. Procurement of sedans and station wagons is limited to compact or subcompact types except as specifically authorized by DoD 4500.36-R sections 3-1 and 3-4.

2.7 **Replacement Criteria**

2.7.1 **Life Expectancies.** The age or mileage expectancies furnished in Appendix F of this manual provide a systematic and uniform schedule of eligibility for replacement planning and are to be used when considering overage CESE for repair or replacement. The age and mileage expectancies applicable to automotive vehicles were derived from administrative use motor vehicle replacement criteria published by DoD for use by all military departments. The life expectancies are not applicable to specialized equipment mounted on vehicles. The statistical vehicle fleet average should be used for projecting mileage. Age and life expectancy are two prime factors that should be used in determining when construction and weight handling equipment should be considered for replacement. Dependability, obsolescence, and major repair costs are the other prime factors when replacement is being considered.

2.7.2 **Repair and/or Replacement Determinations For Automotive Vehicles (Alpha Code A through N).** Repair decisions for Navy-owned vehicles that have reached or exceeded their life expectancy shall be made at the Activity's discretion. If GSA-owned, GSA shall make the repair or replacement decision.

2.7.3 **Repair and/or Replacement Determinations For Construction, Railway, Weight Handling and Other Transportation Equipment (Alpha Code O through Z).**

Transportation Managers shall evaluate all options prior to making extensive repairs and select the alternative that shall benefit the activity over the long-term. TEMC personnel should be consulted to assist in evaluating the various repair or replacement alternatives. See Appendix F for a more extensive discussion on replacement and repair criteria.

2.7.4 **Costing of Repair Estimates For Transportation Equipment.** Uniform cost criteria should be used to determine whether it is more economical to repair or replace transportation equipment (see Appendix G for labor hour input standards). Repair estimates shall include direct labor, material, indirect costs, and other direct charges.

a. **Direct Labor.** Direct labor is all labor, civilian or military, which can be specifically identified to the repair job.

(1) To arrive at direct labor cost, it is necessary to determine the direct labor man-hours required, and then apply the appropriate direct labor hourly rates to these man-hours.

(2) Direct labor costs should be based on information obtained from flat rate manuals, actual work performed, or individual experience, whichever is applicable.

b. **Labor Rates for Civilian Employees.** Cost of civilian labor shall be based on the labor rate for the work center performing the work, or where applicable, the labor rate stated within the commercial transportation contract.

(1) When costs of civilian labor are determined on the basis of annual salaries, these costs shall include the factor for Government-contributed benefits.

(2) When costs of civilian labor are determined on the basis of direct labor hours (days, etc.) applied, these costs shall be computed by adding the factor for Government-contributed benefits to the gross pay, as shown in current pay tables.

c. **Labor Rates for Military Personnel.** Labor rates for military personnel shall be the average military wage rate for the work center performing the work, based on standard rates published in the applicable portion of the FMB.

d. **Direct Materials**

(1) Includes all materials directly applied and identifiable to the particular equipment undergoing repair.

(2) Consumable items received from the supply system shall be expensed at the standard inventory price. Items procured from local services shall be priced at the latest invoice cost including transportation. Fabricated items shall be priced at actual cost including direct expenses as defined herein.



(3) Components used in the repair process shall be expensed at the exchange rate, representing the standard inventory price less credit for return of repairable components. The exchange price can be established as a percentage of the standard inventory price as long as it reflects the estimated cost of repair.

e. Indirect Expenses

(1) The estimate should include indirect expenses associated with the repair process and should be determined by applying the indirect expense rate (shown as dollar cost per direct labor man-hour) to the estimated direct labor man-hours.

(2) The indirect or overhead costs included in the indirect expense rate shall include: manufacturing or production expense (indirect cost incurred within or identifiable to the maintenance shop or organization performing the repair work, although not identifiable to particular jobs); and, general and administrative expenses/costs incurred in general management or supervision which are measurable costs chargeable to maintenance activities.

f. Other Charges

(1) Contractual Services. Services required incident to and identifiable with the performance of all or a portion of the specific maintenance job shall be included as an element of cost. If the contractor is to perform a significant portion of the maintenance job, the cost estimate shall show the estimated charges for labor and contractor-furnished parts in addition to the total contract price.

(2) Readying for Shipment. When the equipment/component cannot be repaired on site and costs must be incurred to prepare the item for shipment regardless of destination, such costs are to be included in the estimate of cost to repair.

(3) Freight. When the equipment/component to be repaired is located overseas and no local capability to repair exists, the cost of freight shall be included as an element of cost. In all other cases, cost of freight shall be excluded.

(4) Miscellaneous. Any other charges required to accomplish the required maintenance and directly identifiable to the equipment shall be included.

g. Exclusions. The following costs shall not be included in the estimate:

(1) Maintenance Expense Items. Such items as tires, tubes, tire chains, tracks, batteries, and antifreeze, etc., are not to be included as a cost in the repair estimate except where replacement is the result of accident damage.

(2) Accessories. The cost to overhaul or replace accessory items used to adapt the equipment for special uses, such as sirens, flashing lights, rank insignia, two-way radios, fire extinguishers, tool kits, or similar items, are not to be included in

the cost repair estimate. Individual estimates of cost to overhaul such items shall be made as required.

## 2.8 **Requirements**

2.8.1 **Initial Issue and Replacement Procurement Requests.** The same requirements procedures apply to both the initial procurement of CESE required to fill newly approved IOs and the replacement of CESE. Requirements must be planned and programmed for the budget year(s) as detailed in paragraph 2.8.3 for OPN-funded requirements. The submission schedule and procedures for NWCF activity requirements are in paragraph 2.8.4. Included are all United States Navy (USN) registered CESE that are controlled by established IOs in the P-1 equipment lines listed in paragraph 2.8.2. The budget year requirements submission shall be based on the approved activity IO. Requested replacements must reach eligibility in the budget year(s) based on the replacement criteria in paragraph 2.7. This does not mean equipment shall be replaced automatically or immediately when eligibility is reached. Replacement of eligible units is predicated on the funding approved for the purchase of CESE.

**Note:** Items such as refuse containers which are components of mobile refuse collection systems, hydraulic tailgates, and construction equipment attachments are considered accessories or attachments to the end items and shall be procured as CESE only when requested with the end item.

For NCF and SOU units, the initial CESE allowance review and update is accomplished by a Biennial Allowance and Requirement Review (BARR). The BARR is used to recommend changes to a Command's CESE allowance and to indicate which vehicles require replacement. Biennially, each allowance holder or designated component organization prepares and submits a BARR in accordance with NAVFACINST 11200.35, Naval Construction Force Biennial Allowance and Requirement Review. Requests for allowance increases must be accompanied by complete justification based upon mission change and operational procedures and requirements changes (see Appendix C).

2.8.2 **Transportation Equipment P-1 Lines.** The broad vehicle/equipment categories comprise the budget grouping P-1 lines in the transportation equipment program funded as CESE.

- XA Passenger Carrying Vehicles
- XV Items Under \$5M (Includes Special Purpose Vehicles and Equipment)
- XC General Purpose Trucks
- XH Construction and Maintenance Equipment
- XJ Fire Fighting
- XG Tactical Equipment
- XZ Armored Vehicles
- 31 Railway Equipment

**Note:** P-1 line 31 is not normally funded but carries a P-1 line number for administrative purposes.

2.8.3 **OPN Requirements Procedures.** In order to prepare for the Navy budget submission, a requirements review shall be conducted on a biennial basis for CESE funded in the Other Procurement, Navy CESE Budget Activity 5. These procedures are applicable to non-NWCF activities and for passenger-carrying equipment only for NWCF activities. Requirements established during the review should fall within approved funding levels and be procured from the two budget year funds. The first budget year is the fiscal year two years following the submission year, e.g., the first budget year for submission in FY 01 is FY 03. Funding constraints preclude the replacement of all equipment items that exceed life expectancy and require activities to execute an effective operation and maintenance program to extend the useful life of equipment to the maximum. To make the best use of the limited funding, the requirements identification process must emphasize selection of the highest priority equipment items. A projected funding level should be developed for each activity to be used for conducting the requirements review. Use of a projected funding amount eliminates the need to prioritize all eligible items and instead emphasis can be placed on selecting the highest priority requirements. Each activity should develop a requirements listing that can be funded within the projected funding amount. The TEMCs should forward a requirements package and any amplifying instructions to activities under their cognizance each review year. The following data should be provided to each activity or be available through direct access to CASEMIS:

- CESE inventory records.
- Current authorized CESE IOs.
- Procurement status information for equipment that is funded and under procurement but not delivered.
- Procurement information for equipment that is planned for procurement but for which funding has not been approved.
- An activity projected funding level for planning purposes and to specifically assist in the selection/prioritization of requirements. It must be emphasized that the funding levels are projections, which more than likely shall change during the programming and budget process.
- A CASEMIS Equipment Code Descriptive Reference Table that includes a complete list of NAVFAC 6-digit equipment codes to be used for the requested requirements. Only equipment codes/types included in the table should be requested. The Descriptive Reference Table designates the equipment codes/types for "Standard Family of Equipment" items. It also provides the estimated unit cost of equipment to be used in developing the requirements list that falls within the projected funding amount.

a. **Activity Review and Submission.** Activities shall conduct the review and submit requirements by letter or through direct access to CASEMIS. Requirements data shall be submitted only for equipment that falls within the projected funding level.

The 6-digit equipment code must be specified for each requested requirement. The requirements are to be integrated into a single priority sequence for all P-1 lines for both procurement years. Priority numbers should begin with "1" through the total number of equipment requirements submitted and each number should be used only once. Priority "1" shall represent the most urgent requirement, priority "2" the next most urgent, etc. To the extent possible within the constraints of budget guidance and availability of funding, equipment procured shall be in accordance with the needs and priorities identified by the activity. Program budget reductions are implemented by deleting, on an equitable basis, the lowest priority items unless a budget cut is aimed at a P-1 line specifically. In that case, the lowest priorities within that P-1 line are reduced. Therefore, activity established priorities should represent the relative importance of the requirements to ensure that the highest priorities are funded. While the selection of requirements shall be based on a combination of mission requirements, priority of assignment, equipment condition and other factors, the following criteria apply:

(1) Care should be taken to ensure that the requested requirements are consistent with the authorized IO. It is assumed that all equipment on hand fills an authorized IO or is excess to activity needs. Excess equipment (equipment over IO) shall not be replaced.

(2) The CESE budget is prepared for the review cycle 15 months prior to the budget year. Therefore, care must be taken to realistically evaluate activity needs in the long term. Application of the replacement criteria must consider the timing of the budget/procurement cycle. As a practical matter, there is only one annual procurement cycle after approval of the budget and release of appropriations. Input from the administration, operation, and maintenance branches of the transportation division as well as prior planning should eliminate, or keep to a minimum, the need for any adjustment during the procurement cycle.

(3) Replacement requests must meet the established life expectancy replacement criteria provided in the CASEMIS Descriptive Reference File. Equipment is also eligible for replacement if the mileage projected for 36 months of additional service exceeds the standards listed in the CASEMIS Descriptive Reference File (available through direct access to CASEMIS, the responsible TEMC, or Navy-provided software) even though the equipment is not eligible by age.

(4) Established policy shall be to request equipment replacements from the standard family of equipment items listed in the CASEMIS Descriptive Reference Table. When requesting equipment items ending in zero-zero ("00"), the Description/Justification for Non-Standard Family CESE Procurement Sheet must contain all the information required for a purchasing agent to procure what is needed. Do not assume the purchasing agent knows the exact needs of the end user activity. For all crawler or mobile cranes, a Crane Requirements Data Sheet must be completed. Information on activity operational requirements, as well as the complete equipment description, is required. For Non-Standard Family Truck Tractor items, a Truck Tractor Data Sheet must be completed. It must be emphasized that the data provided on these

sheets does not constitute a justification for sole source procurement. Consequently, if specific components are annotated on these forms, they must not be so selective as to limit competition. These forms are available on the TEMC website.

b. TEMC Review. The TEMCs shall review activity requirement submissions for accuracy and completeness of information, to include requests for non-standard procurement and truck tractor/crane data sheets. The TEMCs are responsible for coordinating fire-fighting equipment with the responsible Navy Fire and Emergency Services Program Office, NAVFACENGCOM. Where there is a discrepancy between the activity submission and the Navy Fire and Emergency Services Program Office' recommendation, the TEMC is responsible for resolving the differences with the Director of Navy Fire and Emergency Services. The TEMCs shall formulate a systematic plan for equitable distribution of requirements to activities. The TEMCs shall consolidate activity requirements and establish/enter in CASEMIS one prioritized listing for all P-1 lines.

c. OPN Budget Submission. COMNAVFACENGCOM shall coordinate with the TEMCs and NFELC Port Hueneme to determine final requirements to be included in the FMB manual.

d. Emergent Requirements. If an urgent situation arises, the requirement shall be submitted to the TEMC. The TEMC shall determine whether the requirement can be met by loan, diversion of current procurement, or reassignment of an item of equipment available within the support area of the TEMC. When this is not possible, the TEMC shall forward the request to COMNAVFACENGCOM (Code PWT), with full justification, and identification of currently funded item(s) to be deleted.

2.8.4 NWCF Requirements Procedures. NFELC Port Hueneme shall provide detailed guidance to NWCF activities for submission of their requirements in the August/September timeframe at the latest, prior to the start of the fiscal year in which the equipment is to be procured.

a. Activity Review and Submission. Replacement requirements for equipment in Line Items XV, XC, XH, and XJ are to be submitted to NFELC Port Hueneme with a copy to the applicable TEMC. Submission should be provided by a funded Military Standard Requisition and Issue Procedures (MILSTRIP) requisition in message or letter format, including the equipment code and type designator, item description, quantity of each item, unit cost, and total cost of each item. Although the activity requirements shall be based on a combination of mission requirements, equipment condition, and various other criteria, the following applies:

(1) Requirements must be within the current Inventory Objectives (IOs).

(2) All requirements must meet replacement criteria as set forth in paragraph 2.7 and the CASEMIS Descriptive Reference File (available through direct access to CASEMIS, the responsible TEMC, or Navy-provided software).

(3) Established policy shall be to request equipment replacements from the standard family of equipment items listed in the CASEMIS Descriptive Reference Table. When requesting equipment items ending in zero ("00"), procedures set forth in paragraph 2.8.3.a (4) apply.

b. Indefinite Delivery Type Contracts/Requirements Contracts. Selected items of construction equipment are available from the Defense Supply Center, Columbus (DSCC) and Defense Supply Center, Philadelphia (DSCP), on Indefinite Delivery Type Contracts (IDTC). The General Services Administration has awarded requirements contracts for a variety of other equipment, including medium and heavy trucks, fire trucks, trailers, trash and recycling vehicles, wreckers, standard aerials, pole and line trucks with auger, High Mobility Multipurpose Wheeled Vehicles (HMMWV), lubrication and fuel service trucks, and police transport vans. NFELC Port Hueneme shall consolidate and process any requirements received by MILSTRIP submission for equipment available on these contracts. Personnel in the Shore and Fleet CESE Division of NFELC Port Hueneme are familiar with what items of equipment are being offered and the available options. However, activities which hold their own procurement funds may order this equipment directly from DSCC and GSA.

c. TEMC Review. A copy of each requirement submission, along with any "Non-Standard" Vehicle Description/Justification Sheets, Crane Data Sheets, and Truck Tractor Data Sheets should be forwarded to the applicable TEMC. TEMCs shall review the submission and advise both the activity and NFELC Port Hueneme of any recommended changes.

d. Reimbursable Work. NFELC Port Hueneme's processing effort for NWCF CESE requirements shall be done on a reimbursable basis. This is implemented through a surcharge applied to the equipment acquisition cost.

e. Forwarding of Funding Documents. NWCF activities are to provide a funded MILSTRIP requisition to NFELC Port Hueneme by 15 November annually in order for like items of equipment from each activity to be consolidated. This also allows NFELC Port Hueneme to take advantage of available options on the GSA Family Buy contract. Requirements received after 30 November annually may have to be placed on new contracts for the next model year. NFELC Port Hueneme shall accept two separate funded MILSTRIP requisitions from each activity, one for the under \$100,000 requirements and one for the over \$100,000 requirements. This allows for execution of minor funding adjustments between equipment types without further action from the activity. NWCF activities need to add the surcharge to the funding authorization included in their initial MILSTRIP requisition.

## 2.9 **Lease/Rental of Civil Engineering Support Equipment**

2.9.1 **Authority.** General guidance for obtaining CESE via rental or lease is contained in the DoD 4500.36R; CESE may be rented or leased, via formal agreement, from commercial sources, the General Service Administration (GSA) government-wide indefinite quantity lease, and the Navy's centralized leasing contracts.

2.9.2 **Classification, Policy and Procedures.** Methods of obtaining CESE outside the procurement system are classified as charter, rental or lease; leases are further classified as operating or capital leases. These classifications do not include arrangements for vehicles made by personnel in an official travel or temporary duty status.

### 2.9.3 **Charter Arrangements.**

a. Motor vehicles are classified as "charter" when the driver/operator is provided by the vehicle owner; charter of vehicles is more properly classified as the procurement of a service, rather than a rental or lease of equipment.

b. Charter service is considered a contract to provide a specified service, vice a contract to provide a specific vehicle, and therefore does not require a vehicle IO.

c. Full-time charter of equipment may be considered to satisfy regularly scheduled and recurring requirements when Navy-owned equipment is not available or economical to use to meet operational or peak demands. Charter service is advocated to fulfill intermittent, short-term, or one-time requirements, especially when high dollar equipment is required. Requirements of less than four hours per day that require a full-time operator are also likely prospects, as are cyclic requirements of nine or less months per year, which may present a favorable charter situation in that the cost of paying full-time operators (12 months) may be avoided. Also, the use of charter service is advocated for the movement of large groups of personnel or large quantities of materials for distances in excess of the activity's established POD. Examples of candidates for charter service include bus services and street sweeping.

### 2.9.4 **Rental Arrangements.**

a. A rental is classified as the contractual arrangement for Government use of a vehicle for 60 consecutive days or less (120 consecutive days or less for construction equipment); the unit is returned to the owner at the end of the rental period.

b. Activities may, within funding limitations, rent motor vehicles/equipment, without regard to established IOs, to satisfy intermittent, emergency or peak requirements.

c. NCF units shall obtain Brigade Equipment Office approval prior to entering into a rental agreement.

d. COMNAVFACENGCOM approval is required prior to rental of fire fighting equipment.

e. Use of options, renewals, or consecutive 60-/120-day contracts shall not be utilized to circumvent the IO system.

f. The activity commanding officer may authorize the solicitation, and Form DD 1155 should be used as the contract document.

g. The class of vehicle rented to support the visit of a DoD official can be the same as that normally authorized that official. The class of vehicle rented in support of non-DoD officials, including those from foreign countries, shall be the same as that normally authorized a DoD official of comparable rank or position.

h. Rentals are expense items funded with available operating funds.

**2.9.5 Leases.** The various types of leases are noted below. The terms “Lease Purchase” and “Lease to Ownership” are no longer recognized within the DoD/DoN.

a. **Types.** A lease is classified as the contractual arrangement for the Government to use a vehicle for more than 60 consecutive days (120 consecutive days for construction equipment). Depending on the type of lease, the unit is either returned to the owner or retained by the Government at the end of the lease period. The DoN Financial Management Policy Manual and the DoD Financial Management Regulations classify two types of leases as follows:

(1) **Operating Lease.** An operating lease, generally referred to as a “straight” lease, is an agreement which conveys the right to utilize a vehicle for a specified period. The unit is returned to the lessor after the specified period. Operating lease payments are operating expenses; as such, they are funded with operating funds, regardless of the amount. GSA-owned vehicles leased by the Navy are classified as operating leases.

(2) **Capital Lease.** A lease is classified as a capital lease if ownership of the equipment transfers to the government at the end of the lease period, or if the lease agreement contains an option to purchase the leased equipment, regardless of whether or not the option to purchase is exercised, or is intended to be exercised. The Defense Federal Acquisition Regulations Supplement (DFARS) states that a capital lease is in essence the same as an installment purchase and should be investment funded.



b. General Lease Provisions

(1) Per the NAVFAC P-68 Contracting Manual, lease of motor vehicles and equipment utilizes NAVFAC contracts, not NAVSUP supply type contracts.

(2) Motor vehicle leases are governed by certain legislative constraints and economic considerations including the Balance of Payments Program. Restrictions are described in the COMNAVFACENGCOM Contracting Manual (NAVFAC P-68), the DFAR and the Federal Acquisition Regulation (FAR). Annual appropriation acts may contain additional restrictions.

(3) It is Navy policy to lease vehicles only when proven to be cost effective, or when no reasonable alternative exists to meet mission requirements.

(4) Offices and commands (claimants) are responsible for budgeting and funding for the lease of motor vehicles. COMNAVFACENGCOM is responsible for the development and promulgation of technical and economic criteria for motor vehicle leases, contracting procedures, and reporting requirements for maintaining Navy-wide lease IO control.

(5) The lease of motor vehicles and equipment is restricted to activities ashore for filling the vehicle IOs established in accordance with paragraph 2.2.2 of this publication; the number of motor vehicle leases shall not exceed the activity's authorized lease IO. However, a leased unit may be applied against a Navy-owned IO when Navy-owned equipment is planned or pending conversion of IO from Navy-owned to lease.

(6) Requests for lease IOs or changes to existing lease IOs shall be submitted in accordance with paragraph 2.2.2 in the same manner as for Navy-owned vehicles. Increases in lease IOs must include a statement from the requiring activity that funding is available to cover the increased lease cost.

(7) Vehicles shall not be leased based on rank or position alone. Class III, IV, and V sedans authorized for individuals in accordance with DoD 4500.36-R are exempt.

(8) The lease of sedans and station wagons is limited to subcompact or compact types. An exception is permitted when, on the basis of documentation forwarded through established channels, the CNO approves the use of larger sedans or station wagons as essential to an activity's mission. Also, TEMCs may authorize the acquisition of Class III (mid-size) sedans if necessary to meet EPA requirements for acquisition of alternate fueled vehicles; DoD 4500.36R, paragraph 3-1.e applies. Lease specifications shall conform to the design, weight, equipment and accessory specifications that are employed for the purchase of Navy compact/subcompact sedans and station

wagons. This does not prohibit contractors from providing optional equipment not required by the specification in order to increase resale value.

(9) COMNAVFACENGCOM approval is required prior to lease of fire fighting equipment; requests should be forwarded via the responsible TEMC.

(10) Activities are responsible for forecasting vehicle requirements to support new or expanded mission assignments and include them in their IO and requirements review in time to meet the new requirement. When notification of new mission assignments does not allow sufficient time to procure new vehicles, the activity shall consider, prior to submission of a formal request for lease authority, temporary reassignment from existing resources, retention of in-service vehicles scheduled for replacement, or, with TEMC support, diversion of due-in assets or transfer/loan from other activities.

(11) Requests to lease shall be supported by detailed justification/economic analysis. When a new requirement has been identified, an Economic Analysis shall be conducted to determine the most economical type of vehicle to acquire, using the format provided in Appendix H, Figure H-1, and guidance provided in DoD 4500.36R, Appendix B. The TEMC is responsible for evaluating the justification/economic analysis. Leasing shall only be authorized when leasing is a cost benefit to the Navy or; local laws or status of forces agreements preclude the use of U.S. Government-owned vehicles or; an emergent requirement precludes filling with a Navy-owned or GSA-managed asset. While a TEMC-authorized IO is required, an economic analysis is not required to support lease requests for GSA-owned assets.

(12) Vehicles may be leased against a Navy-owned IO to meet immediate mission requirements. Action shall be initiated to obtain a Navy-owned vehicle during the next annual procurement process.

(13) Invitation to bid solicitations and resulting contracts for leased vehicles shall provide for Government self-insurance or as prescribed by Subpart 28.3 of the FAR as applicable. The contractor shall warrant that the contract price includes no cost for insurance for which the Government is responsible.

(14) The Navy normally performs all maintenance on leased vehicles unless alternative arrangements have been made with the lessor.

(15) Invitations for bids should not be limited to current year production models unless overall economy is not affected.

(16) Vehicles leased from commercial sources shall be identified in the same manner as Navy-owned vehicles, in accordance with paragraph 2.14.4. Leased vehicles shall not be repainted to conform to Navy vehicle colors.

(17) All federal agencies will report leasing information using the Federal Automotive Statistical Tool (FAST). This is a data collection tool developed as a result of two federal mandates for fleet data collection: Federal Management Regulation (FMR) 102-34 and Executive Order (EO) 13149. See chapter 4 of this manual for specific guidance regarding data submission.

c. Operating Leases.

(1) Operating leases require TEMC approval and an authorized lease IO issued by the TEMC prior to the lease.

(2) TEMC approved lease authority is valid for the term of the lease contract. Where applicable, DFAR requirements such as 207.470, pertaining to lease terms of 18 months or more, must be met unless an approval has been granted to do otherwise. This stipulation does not apply to GSA-owned vehicles leased by the Navy, or to vehicles used by the officials listed in paragraphs 3.1.c and 3.1.d of the DoD 4500.36-R.

(3) Activities are to submit requests for all operating leases to the responsible TEMC for approval; the request shall include a full justification supporting the request. As a minimum, the justification will include cost data that supports leasing in lieu of a Navy-owned asset, as well as the following information:

- Name and location of the activity requiring vehicle support and number of vehicles required, by type.
- Special requirements such as unmarked, heavy-duty suspension, security configuration, etc.).
- Intended use.
- Vehicle support through GSA FLEET, if applicable. Include Billing Office Address Code (BOAC). (If the activity does not already have a BOAC number assigned, a number may be requested from your local GSA region.)
- Length of anticipated use and projected annual mileage.
- Name and telephone number, commercial and Defense Switched Network (DSN) of the contact at the activity.

(4) TEMCs will not approve operating lease requests without adequate written justification and an approved IO for the equipment code requested. If the requested operating leases will cause on-hand assets to exceed the approved IO, the excess units must be in the process of being sent to disposal, or an interim IO increase must be approved by the TEMC. The TEMC should also review similar assets at other nearby activities for possible redistribution of usable vehicles.

(5) When leasing from a commercial source, activities should first consider leasing automobiles and light trucks from the centralized open-end leases, which the Navy negotiates annually with major commercial leasing companies. Vehicles may be obtained from the indefinite quantity contracts using DD Form 1155. Vehicles can be leased off these contracts without further competition.

(6) When leasing from commercial sources, a Standard Form 33, Solicitation, Offer, and Award, is required. Contract procedures and forms are prescribed in the COMNAVFACENGCOM Contracting Manual, NAVFAC P-68. The activity commanding officer may authorize the solicitation, and Form DD 1155 should be used as the contract document. Requirements for the lease of vehicles shall be consolidated to the extent feasible and invitations for bids shall be requested on a competitive basis with award going to the lowest conforming bidder.

d. Capital Leases.

(1) Due to OPN funding constraints, capital leases are only authorized for non-passenger carrying vehicles for NWCF activities. Capital leases are prohibited for appropriated fund activities and for passenger carrying vehicles at NWCF activities.

(2) With prior TEMC approval, NWCF activities may execute capital leases for non-passenger carrying CESE. When a capital lease is desired, the NWCF activity should specify this in the lease request submitted to the TEMC. The lease request should include the type of lease agreement, equipment code/quantities, estimated lease cost, and the month/year the purchase option may be exercised. The solicitation/lease agreement should be structured so that the purchase option reflects a reasonable fair market value of the item at the time it is to be exercised.

(3) DFARS stipulates that capital leases must be investment funded. Therefore, the use of O&M,N appropriations provided on a customer order to a NWCF cannot be utilized by the NWCF activity to finance customer equipment classified as an investment under a capital lease agreement.

(4) NWCF activities must ensure compliance with applicable DoD FMPM, DoN FMR and DFARS requirements when exercising capital lease agreements.

(5) When a leased vehicle is converted to a Navy-owned vehicle via a capital lease arrangement, the CASEMIS inventory database shall be changed from status code "I" (rented/leased equipment) to status code "O" (Navy-owned equipment).

#### **2.9.6 Issues Applicable To Charter, Rental Or Lease Agreements:**

(a) Charter, rental and lease agreements should clearly assign responsibility to either the Navy or to the lessor for meeting requirements stipulated in the contract for equipment operation, inspection, test, maintenance and repairs.

(b) Equipment rates should include all costs of loading and unloading the equipment at the contractor's plant, including dismantling and assembling charges as necessary. If the Government is able to provide the equipment operator and the contractor is willing to rent the equipment without the operator, this should be clearly indicated. If the equipment is rented with operator (i.e., charter), the regular hourly wage rate of the operator and the overtime rate should be indicated.

(c) Moving costs may be applicable in the event the contractor delivers the equipment to the job site. The moving costs should be shown as the cost per move plus mileage. For example, the cost of a move for a small crawler tractor to a Government job site might be \$45 per move plus 80 cents per mile of the distance one way.

(d) The Navy should reserve the right to terminate contracts upon due notice if it is determined to be in the best interest of the Government. The Navy is responsible upon termination to return the equipment in as good condition as when delivered, less normal wear and tear. The Navy should not be responsible or obligated to pay for any damages resulting from the negligence of the contractor or employees of the contractor.

(e) Equipment agreements shall state that equipment must comply with all applicable ASME/ANSI standards and OSHA Regulations, for example, CFR 29; activity-specific regulations and requirements pertaining to safety and operation of equipment on Government property should also be included in the agreement. Agreements involving weight handling equipment shall require compliance with NAVFAC P-307 requirements. The Contractor shall be required to submit a certificate of compliance stating the equipment provided under the agreement meets all requirements stipulated in the agreement; the Contractor's certification statement should specifically state that all equipment provided meets applicable OSHA/ANSI regulations.

(f) Only trained and properly authorized and licensed personnel shall operate charter, rental or leased equipment.

(g) Contracts should require the contractor to ensure that equipment provided to the Government is free from defects and in good, dependable, and safe operating condition. The Government should have the option to inspect the equipment for defects prior to entering into an agreement with the contractor.

(h) Equipment agreements must stipulate equipment testing each day prior to use to determine if all controls are in safe working condition. If equipment is not

in safe working condition, it shall not be operated until properly repaired, as stated in the agreement.

(i) If equipment is in the custody of the Government in excess of one workday (8 hours), the Government should be responsible for and perform normal operational-type services and maintenance, including fueling, lubrication, battery service, checking air pressure in tires, adding oils, etc. These services should be performed by the Navy in the manner prescribed by the contractor, and as outlined in applicable OSHA regulations.

(j) Unless otherwise specified in the agreement, contractors should, at their expense, be responsible for maintaining equipment provided under the contract in good operating condition during the contract period. In terms of the agreement, this should include labor or replacement parts, and any safety recalls or bulletins as applicable. The Contractor shall be notified of any discrepancies in the operation of the equipment as soon as possible after deficiency is noted.

(k) The Contractor should be required to provide the Government documentation of any service and/or repairs performed on equipment during the rental period, and to notify the Government of any safety advisory bulletins or recalls within 24 hours after receipt, or the next duty day. The Government shall remove from service any equipment identified as having a recall or safety notice pending, until such discrepancies are validated and repaired. Contract should stipulate that, when equipment has to be removed from service for the contractor to perform repairs, the costs associated with this time will be deducted from rental payments.

(l) The contract should specify that the Government retains the right to terminate the contract should the contractor fail to make the necessary repairs to maintain or restore the equipment to good operating condition, and that the Government shall arrange (with the contractor) to have the equipment returned to the point of origin.

(m) See Chapter 3, paragraph 3.9 and Chapter 4, paragraph 4-1.11 of this publication for information on operator requirements for licensing, operations and maintenance of construction and specialized equipment; these requirements, including requirements for development of Standard Operating Procedures, apply to rented and leased equipment. (Special Note: OSHA relocated requirements pertaining to aerial lift devices to 29 CFR 1926.453; users of aerial lift devices must comply with OSHA guidelines.)

## 2.10 **Registration And Technical Record Control**

a. Responsibilities. The responsibility for assigning USN registration numbers to automotive vehicles, construction equipment,, weight handling equipment, and specialized equipment, and maintaining current and complete files and records for all naval activities' transportation equipment ashore and afloat is assigned to

COMNAVFACENGCOM. United States Navy numbers are assigned to all CESE and selected items of CEEI. USN numbers are assigned by NFELC Port Hueneme in accordance with Figure 2-3 of this publication. Some examples of CEEI that are registered in CASEMIS by USN number by the NCF include, but are not limited to: Refrigerated Containers, Shower Bath Units, Water Purification Units and SIXCON Pump Units. United States Navy General (USNG) (cargo container) number identifies International Safety Organization (ISO) container equipment to general type found in Appendix (E), Table E-1.

b. Purpose of Registration. The principal purpose of registering appropriate items of transportation equipment is to establish permanent and positive identification of each unit of CESE as categorized in Figure 2-3. This is accomplished by assigning a permanent U.S. Navy registration number to each unit of equipment at the time of its acquisition by the Navy.

c. Classification by Registration Number. The U.S. Navy registration number assigned to each unit of transportation equipment is keyed to classify the unit by the pertinent subcategory within one of the eight major categories of CESE. Figure 2-3 shows an outline of the classification system. The CASEMIS Descriptive Reference File (available through direct access to CASEMIS or the responsible TEMC) identifies the appropriate items of CESE requiring registration. Registration numbers are also assigned to specialized equipment when the registration number is required for equipment use off base.

(1) Registration of Leased Equipment. All CESE leased for a period of 61 days or more are required by law to be identified as Navy equipment. Vehicles leased from the GSA motor pool shall retain the GSA prefix "G" identification number. Vehicles leased from commercial sources shall be provided license plates with USN registration.

(2) Registration of Former Railroad Interchange Cars. Activities with railroad cars that were previously identified under "USNX" or other identification but no longer appear in the current Official Railway Equipment Register are to request U.S. Navy registration numbers in the 6xxxxxx series for the cars. All USN 6xxxxxx registration series cars are to be included in the I&R Subsystem of CASEMIS.

(3) Assignment Logic for ISO/USNG Numbers (NCFs/SOUs). ISO Container Control Numbers (ICCN) are eleven character codes that consist of four capital letters of the Latin alphabet (which designate ownership of the container), followed by six Arabic numerals for the serial number, and one check digit. The check digit provides a means of validating the transmission accuracy of the owner code and serial number. The check digit is determined by a formula in *ISO Standard*, ISO 6346-1984 (E), and is the remainder left over after dividing the product of the formula by the modulus number "11."

If eleven divides evenly into the product the check digit equals "0" (zero). If there is a remainder after dividing by eleven, then the check digit equals the remainder (with the exception of a remainder of 10).

**NOTE:** In order to avoid the duplication that results from the check digit value of zero being assigned as a remainder of both 10 and 0, the serial numbers that result in remainders of 10 have not been assigned. This accounts for the gaps in serial number assignments for the ICCNs.

**2.10.1 Procedures for Reporting Acquisition and Requesting Registration Number Assignment** All equipment contained in the CASEMIS Descriptive Reference File which is Navy-owned, Navy-leased for a period of 61 days or more should be reported within 15 days of receipt. If directed by the TEMC, GSA acquired vehicles should also be reported for registration. Early reporting shall provide accurate inventory postures and assist the TEMC with requirements planning. Unreported equipment, centrally procured by NAVFAC, is considered a new due-in asset and shall show a newer asset posture than actually exists. Early reporting of equipment shall accurately show the current status of an activity's equipment inventory based on depreciation and life expectancy. Accurate and complete information is essential for locating equipment when problems arise concerning maintenance on equipment and equipment components. The Navy-wide transportation equipment technical records are included in the Inventory and Registration (I&R) subsystem of CASEMIS. The field-working proponent responsible for management of the system is NFELC Port Hueneme.

Mandatory equipment acquisition data elements to be reported for each equipment item are: Activity UIC, Navy Registration Number or GSA number, Status Code, Make, Model, Serial Number, Year of Manufacture, Equipment Code/Type Designator, Contract Number, Date Received, Acquisition Cost and Fuel Type. Other data elements may also be added in the fields provided or in the remarks field.

a. **Reporting Acquisition of Registered CESE**. As part of the procurement contract, the manufacturer is required to identify applicable vehicles or equipment by U.S. Navy registration numbers affixed to the equipment. In addition, short standard nomenclatures describing the equipment are etched or die-stamped on the nameplates for use by field personnel. Initial registration provides a means of identifying each piece of equipment on record in a uniform manner from the time of purchase until final disposition. Material Inspection and Receiving Reports, Form DD 250, or Motor Vehicle Delivery Orders (MVDOS) are prepared for equipment purchased from DoD contracting offices. If the DoD contract calls for equipment to be shipped Freight on Board (FoB) Destination, the receiving activity must inspect and sign the DD 250 and forward the document to the responsible defense contracting office. Activities are encouraged to maintain their own records within the Inventory and Registration (I&R) subsystem of CASEMIS. Activities not maintaining I&R via direct access to CASEMIS shall report equipment acquisitions by mail or fax to the responsible TEMC. For NCFs/SOUs, a DD 1342 or electronically prepared facsimile of the same shall be prepared for each unit received and forwarded to NFELC Port Hueneme.



**Classification of CESE by Assignment of Permanent USN  
Registration Numbers**

<b><u>Registration Series</u></b>	<b><u>Category</u></b>
<u>USN</u> 20xxxxx	Crushing, Mixing, Batching and Paving Equipment
21xxxxx	Batchers
22xxxxx	Crushing, Washing, and Screening Equipment
23xxxxx	Finishers
24xxxxx	Mixers
25xxxxx	Distributors and Placers
26xxxxx	Spreaders and Transporters
27xxxxx	Asphalt Equipment (Miscellaneous)
28xxxxx	Concrete Equipment (Miscellaneous)
<u>USN</u> 30xxxxx	Drilling, Blasting, and Driving Equipment
31xxxxx	Compressors, Air, Portable (60 through 600 cu. ft./min.)
35xxxxx	Rock Drilling Equipment
36xxxxx	Pile Drivers
37xxxxx	Well Drilling and Earth Boring Equipment
<u>USN</u> 40xxxxx	Earth Moving Equipment
42xxxxx	Crane, Crawler, Revolving, w/Backhoe, Dragline, Shovel, and Skimmer Attachments
43xxxxx	Ditchers, Rooters, and Mucking Machines
44xxxxx	Graders
45xxxxx	Loaders
46xxxxx	Rollers
47xxxxx	Earth and Rock Moving Equipment, Off Highway Trucks, Trailers, and Scrapers
48xxxxx	Tractors
<u>USN</u> 50xxxxx	Power Generation and Miscellaneous Construction and Maintenance Equipment
51xxxxx	Generators (5 KW and up); Welders, Electric Arc; Lighting Equipment, Trailer Mounted
52xxxxx	Pump, Water, Centrifugal or Diaphragm, Portable, 4-inch to 12-inch capacity, Gas or Diesel
53xxxxx	Pump, Special Construction and Asphalt, Portable
54xxxxx	Servicing Equipment, Refrigeration Containers (Miscellaneous)
55xxxxx	Portable Power Operated Pipe Tongs, Amphibious Fueling Hose Reel, and Skid Mounted Air-Conditioning Unit
56xxxxx	Soil Stabilizing and Lawn Equipment
57xxxxx	Sweepers, Snowplows, Snowplow Attachments, and Sanders
58xxxxx	Trash and Garbage Collectors
59xxxxx	Mobile Machine Shops

Figure 2-2.

**Classification of CESE by Assignment of Permanent USN  
Registration Numbers**

<b><u>Registration Series</u></b>	<b><u>Category</u></b>
<u>USN 60xxxxx</u>	Railway Equipment (Except Locomotive Cranes)
61xxxxx	Car, Railway, Cargo Hauling
62xxxxx	Car, Railway, Self-propelled
63xxxxx	Car, Railway, Special Purpose
64xxxxx	Car, Railway, Tank
65xxxxx	Locomotive, Railway
66xxxxx	Equipment, Railway, Track Maintenance
67xxxxx	Car, Railway, Power Generating
68xxxxx	Station, Railway, Mobile Power
<u>USN 70xxxxx</u>	Fire Fighting Equipment
71xxxxx	Fire Truck, Crash and Rescue (CFR)
72xxxxx	Fire Pump, Portable
73xxxxx	Fire Truck, Pumper Combination, Structural
74xxxxx	Fire Truck, Aerial Ladder
75xxxxx	Generator Foam, Trailer Mounted
<u>USN 80xxxxx</u>	Weight Handling Equipment
81xxxxx	Crane, Tractor Mounted or Operated, and Landing Craft, Wheel Mounted
82xxxxx	Crane, Truck, and Missile-Handling
84xxxxx	Crane, Railway, Locomotive
87xxxxx	Hoist and Winch Power
88xxxxx	Propelling or Propulsion Unit, Marine Type
89xxxxx	Pollution Abatement Equipment
<u>USN 90xxxxx</u>	Passenger Vehicles, Trucks, and Trailers
91xxxxx	Bus
92xxxxx	Sedan
93xxxxx	Station Wagon/Carryall Truck
94xxxxx	Truck, Light (up to 10,000 LB. GVW)
95xxxxx	Truck, Medium (10,001 up to 23,999 LB. GVW)
96xxxxx	Truck, Heavy (24,000 LB. GVW and up)
97xxxxx	Trailer
98xxxxx	Motorcycle and Scooter
<u>USN 4xxxxx</u>	Nonappropriated Fund Vehicles

Figure 2-3 (Cont'd)

b. Registration Number Assignment and Reporting of Unregistered CESE. When an activity receives an item of transportation equipment that is not identified by a permanent U.S. Navy registration number but which requires one, a request for a registration number should be made immediately. The custodian of the item received shall initiate a request to the responsible TEMC. The TEMC shall coordinate U.S. Navy registration number assignment with NFELC Port Hueneme and provide the identification number back to the activity. Upon assignment of the registration number, activities with direct access to CASEMIS shall enter the acquisition data elements. Activities without direct access to CASEMIS shall fax or mail the acquisition data elements to the responsible TEMC using the website-provided load sheet or a client-developed format. The custodian of the equipment shall affix the assigned U.S. Navy registration number on the unit in accordance with Appendix J. For SOUs, a DD 1342, or electronically prepared facsimile of the same, shall be prepared for each unit received and forwarded to NFELC Port Hueneme.

2.10.2 **Special Vehicle Registration in the National Capital Region.** The TEMCs shall maintain a current record of official Government and State tags in use on Navy-owned motor vehicles within their areas of support to include the special program for registration and U.S. Government tags for vehicles regularly based or housed in the District of Columbia. The records shall describe the motor vehicle by type and U.S. Navy registration number, cross-referenced to the special tag numbers, and shall include information regarding all subsequent reassignments of tags and voided tag numbers.

2.10.3 **Nonappropriated Fund Vehicle Registration.** All transportation equipment for nonappropriated fund activities, whether received from excess sources or by procurement, shall be registered in the 4xxxxx series of USN registration numbers. Registration numbers for Morale, Welfare and Recreation (MWR) vehicles, are assigned by the Bureau of Naval Personnel (BUPERS), NAVSUPPACT Memphis, Millington, TN 38054-5045, Code 656, telephone (901) 874-6670 or DSN 882-6670. Registration numbers for Navy Exchange and Commissary vehicles are assigned by the Navy Exchange Service Command (NEXCOM), Virginia Beach, VA, Code BPFS, telephone (757) 631-3633. MWR and resale vehicle markings shall be in accordance with that command's policy.

2.11 **Alterations and Modifications.** All alterations and modifications to USN-Numbered CESE that affect the safety, stability, operating characteristics, or so alter the original design configuration so as to change the basic function of the equipment in terms of end use performance or capacity, shall be approved in writing by the responsible TEMC (except for cranes which must be approved by the Navy Crane Center). This includes alterations and modifications to support transportation of handicap personnel.

a. Requests. Requests for modification shall contain full justification and be accompanied by a detailed description and engineering calculations and drawings where appropriate. The TEMC shall approve or disapprove the request in writing.

However, for any design change that affects the safe operating characteristics or warranty, the TEMC shall obtain the approval of the manufacturer (contractor).

b. Records. Upon receipt of approval, activities shall file a copy in the equipment history record together with the record copy of the Shop Repair Order (SRO) or Equipment Repair Order (ERO) used in accomplishing the approved alteration or modification. When the alteration or modification affects the end use or capacity of the equipment so as to change its equipment code identification, the equipment code/type designator in the CASEMIS Inventory and Registration system shall be corrected. For any alteration/modification to weight handling equipment, refer to the NAVFAC P-307.

| 2.12 **Disposition of Equipment by Sale**. DoD 4140.1-R (DoD Material Management Regulation, Revised 24 July 2001) permits the sale of equipment meeting certain criteria.

2.12.1 **Applicability/Eligibility**. Equipment authorized for sale is limited to certain types of equipment meeting specific mission support, repair cost, ownership and procurement funds source criteria.

a. Equipment eligible for sale shall meet the following criteria:

(1) Must be “non-excess” to the activity mission (i.e., must be required for continuing approved programs/missions of the holding activity).

(2) Must be owned by a Navy Working Capital Fund Activity.

(3) Must not be expressly prohibited from sale. See sub-paragraph (c).

b. In addition to the eligibility requirements listed above, equipment must also meet one of the following criteria in order to be eligible for sale:

(1) The unit must meet or exceed shore life expectancy criteria (age or miles), as defined in Appendix F, at the time of sale. OR

(2) The unit must require repairs that would exceed economical repair cost limits defined in Sections 2.7.2 and 2.7.3. Specifically,

(a) Alpha Code A-N equipment (less passenger carrying) must require repairs the total cost of which would exceed 50% of the unit’s acquisition cost.

(b) Alpha Code O-Z equipment must require repairs the total cost of which would exceed the unit’s one-time repair cost limit defined in Appendix F.

c. Expressly prohibited from sale, and thus subject to disposal requirements contained in Section 2.13, are those units determined ineligible for sale (based on the above criteria) and units in the following categories:

- (1) Passenger Carrying Vehicles
- (2) Fire Fighting Equipment
- (3) Railroad Equipment
- (4) Ambulances and other special Medical/Dental vehicles
- (5) Material Handling Equipment.

d. This section does not apply to CESE offered as exchange (trade-in) when such exchange is applied as whole or partial payment toward the acquisition of similar items. Refer to DFARS Subpart 217.70 (Exchange of Personal Property) and to the Federal Property Management Regulations Part 101-46 (Replacement of Personal Property Pursuant to the Exchange/Sale Authority) for guidance in this area.

2.12.2 **Sale Proceeds**: Proceeds from the sale of CESE must be applied to the procurement of a like or similar item which replaces the unit being sold and performs substantially the same function as the item being sold. Further, sale/procurement transactions are authorized on a one-for-one basis only; the proceeds from the sale of two or more units cannot be combined to procure a single unit, as the additional unit(s) sold would be considered “excess” and thus not eligible for sale.

2.12.3 **Procedures**: Equipment sales must be conducted in accordance with applicable portions of the Property Disposal Manual/Federal Property Management Regulation.

2.12.4 **Documentation**.

a. Pre-Sale: Prior to sale, the holding activity must prepare a written determination supporting sale of the equipment. This determination, which must be maintained as part of the procurement record of the replacement unit, must state that:

(1) The anticipated monetary return from the sale warrants the administrative effort and associated costs incurred as a result of the sale.

(2) The sale and subsequent procurement of a replacement unit will be conducted in accordance with the requirements of this section.

b. Post-Sale: After the sale, the selling activity must document that:

(1) The sale was conducted in accordance with the requirements of this section,

(2) The proceeds from the sale were in fact available for application in full or in partial payment for the item acquired and

(3) The item acquired with sale proceeds are needed for on-going mission support and is similar to and/or performs similar functions as the item sold.

c. General: Sale and funds flow documentation sufficient to satisfy outside audit must be retained on file for a minimum of three years. Documentation recommended for retention includes: Pre- and post-sale determination statements, summary historical maintenance and repair documents; one-time repair cost estimates; out of service rate/lost revenue documentation; a description of the old and new unit (including a statement of similarity and a copy of the Standard Form 97, Certificate of Release of a Motor Vehicle of the unit sold); funds flow documentation showing a clear link between sale proceeds and procurement funds; a statement that the unit sold was eligible for replacement, and any other documentation that would support sale of the equipment and tracking of funds for audit purposes.

#### 2.12.5 **Accountability**

a. Proceeds received from the sale of CESE shall be turned over to the appropriate finance/disbursing officer for deposit and be properly identified as proceeds from the sale of CESE eligible for replacement so that those proceeds may be applied to the acquisition of replacement CESE.

b. Proceeds received from the sale of CESE shall be available for obligation for the acquisition of replacement CESE during the fiscal year in which the sale is made and for one fiscal year thereafter. Unused proceeds shall be deposited in the miscellaneous receipts account at the Department of Treasury.

c. Proceeds received from the sale of CESE shall be taken into consideration in the submission of budget requests.

d. Unless otherwise addressed in this section, proceeds from the sale of CESE shall be accounted for in accordance with the GAO Policy Manual for Guidance of Federal Agencies, title 7, Fiscal Procedures, Appendix V.

2.12.6 **Compliance**. Each NWCF activity must comply with this section when dealing with the sale of CESE and the application of the proceeds of that sale to acquire replacement CESE.

2.12.7 **Command Review**. Biennial review of the vehicle sale process is to be accomplished by each NWCF activity Command Evaluation Office to assure compliance with this section and other governing fiscal regulations.

## 2.13 **Distribution of Excess Transportation Equipment**

### 2.13.1 **Disposition Process**

a. **Disposition Instructions for Shore Activities.** The disposition process and documentation for excess equipment removed from service varies according to the condition of the equipment. If excess equipment is usable, the TEMC shall ascertain if there are other Navy requirements for the equipment and provide direction for its transfer. The record holding TEMC shall immediately advise the other TEMC of any usable excess transportation equipment prior to sending to DRMO. If there are no other Navy requirements for usable equipment, the record holding TEMC shall instruct the activity to effect a disposal action with the appropriate Defense Reutilization and Marketing Office (DRMO). With the exception of medical, railway, fire fighting, and material handling equipment as specified in paragraph 2.12.2, the holding activity shall initiate disposal with the appropriate DRMO for equipment that is not in usable condition. The processing of excess equipment shall be in accordance with the Defense Disposal Manual (DoD 4160.21M), NAVSUP Manual Vol II, and the DoD Financial Management Regulation (FMR), where applicable.

b. **Disposition Instructions for NCF, NCTCs and SOUs.** All requests for disposition instructions for CESE must be forwarded by the allowance holder (property holders via their allowance holders) to NFELC Port Hueneme with the following information provided for each USN-numbered piece of equipment: EC, description, year of manufacture, condition code, accumulated miles/hours, estimated cost to repair to A4 condition, whether an allowance item or excess, a list of assigned attachments, and any pertinent information about the item that would influence final disposition. After reviewing the information, NFELC Port Hueneme shall determine whether or not it is feasible to retain the item within the Navy. If it is considered feasible to retain, NFELC Port Hueneme shall authorize retention by the activity, transfer to another activity or rehabilitation at an overhaul facility. If retention is not economical, NFELC Port Hueneme shall direct the transfer of the equipment with its collateral equipage, attachments, and Equipment History Jacket to DRMO. Activities shall remove all unit decals and stencils from equipment prior to turn-in to DRMO. Activities must request and obtain NFELC Port Hueneme approval for the removal of any parts PRIOR to turning in equipment to DRMO. Within thirty (30) days after completion of transfer actions, forward a SIGNED (signed by the receiving activity/DRMO representative) and DATED copy of the transfer document, DD Form 1348-1, or 1149, *Procurement Requisition Invoice/Shipping Document*, to NFELC Port Hueneme.

c. Navy activities may withdraw serviceable, excess CESE from the property disposal account to satisfy unfilled inventory objectives/allowances. These acquisitions shall be reported to the TEMC/NFELC Port Hueneme within 15 days after receipt. Temporary withdrawals may also be made to obtain necessary parts for an item of CESE. Once parts are withdrawn, the excess vehicle shall be returned to DRMO.

**2.13.2 Reporting of Excess Medical, Railway, Fire Fighting, and Material Handling Equipment**. Regardless of equipment condition, the holding activity shall report excess medical, railway, and fire fighting equipment on a Standard Form (SF) 120 to the TEMC for disposal instructions as follows:

a. Ambulances and other special medical and dental vehicles shall be listed on an SF 120, separate from other equipment, which shall be forwarded to the responsible TEMC, with a copy to the Health Care Support Office. This is not applicable to NCF and SOU field type ambulances.

b. Railroad equipment shall be listed on a separate SF 120 and forwarded to the responsible TEMC.

c. Fire fighting equipment shall be listed on a separate SF120 and sent to the responsible TEMC.

d. Material Handling Equipment Disposition Requests (NCFs/SOUs). SPCC Instruction 10490.3, *Material Handling Equipment for Forces Afloat Fleet Issue Control Points, Naval Shore Establishment and Land-Based Operating Forces: Administration and Control of*, contains complete instructions to report redistribution and disposal of material handling equipment (other than 2C cognizance). The following supplemental information is provided to assist activities that do not hold these instructions.

(1) Disposal Process. A six-step overview of the disposal process is as follows:

(a) The Allowance Holder submits a *Report of Excess Personal Property*, Standard Form 120 (completed in accordance with paragraph 2.13.3) directly to Commander, Naval Inventory Control Point, Mechanicsburg, PA 17055-0788.

(b) The Allowance Holder submits the SF-120 to NAVICP as a request for disposal of equipment with a copy of the SF-120 to NFELC Port Hueneme.

(c) NAVICP Processes the request and sends copies of the completed SF-120 back to the Allowance Holder and NFELC Port Hueneme.

(d) The Allowance Holder then transfers the equipment along with a DD Form 1348-1 to The Defense Reutilization and Marketing Office (DRMO), and obtains a signed copy of the DD Form 1348-1, *Procurement Requisition/DoD Single Line Item Release/Receipt Document*.

(e) The Allowance Holder forwards a signed copy of the DD Form 1348-1 to NFELC Port Hueneme.

(f) NFELC Port Hueneme then removes the USN registration number from CASEMIS records and the disposal transaction is completed.



(2) Equipment Description. Reports shall include a complete description of the equipment in Block 18(b).

(3) Repair Estimates. Reports shall indicate repair estimates for Condition Code A4.

(4) Replacement. Reports shall indicate whether a replacement is required or has been received. When a replacement has been received, the USN registration number of the replacement shall be cited.

**2.13.3 Preparation of the SF 120, Report of Excess Personal Property.** This guidance provides a uniform system for the preparation of the SF 120 (Figure 2-4). If this form is used to report excess CESE, use of a separate form for each P-1 line is recommended. Special attention should be given to information annotated in Block 18b. For example, the last item in the list, "est. cost to place in B-5 condition", should only contain those repairs necessary to return the vehicle/equipment to a safe and serviceable condition (power train, lights, brakes, and other related repairs). Reporting activities shall prepare the SF 120 in accordance with the following instructions.

a. Block 1 - The Report Number is composed of the activity Unit Identification Code (UIC) for the first six positions, the Julian date for the next four positions, and the next position identifies the type of property being disposed of as indicated by the following codes:

- (1) K - Items that have a national stock number (NSN).
- (2) Z - Base closure property.
- (3) U - Shelf-life property.
- (4) L - Nonstandard stock number and items in FSC 23, 24 and 7430.

b. Block 2 - Enter the date the report is mailed or faxed.

c. Block 3 - Leave blank.

d. Block 4 - Insert an "X" in the appropriate box.

e. Block 5 - Enter the Defense Reutilization and Marketing Office or the appropriate TEMC.

f. Block 6 - Enter the appropriate fund account number when applicable (e.g., exchange/sale property, nonappropriated fund property).

g. Block 7 - Enter the complete name and address of reporting activity.

h. Block 8 - Enter the name and title of the person approving the report. The signature of this person or their authorized designee is required.

i. Block 9 - Enter the name and DSN, FTS, or commercial telephone number of the person to contact for further data about reported material.

j. Block 10 - Leave blank.

k. Block 11 - Enter the office to which requisitions are to be sent. If the data is the same as Block 7, the words "see Block 7" may be used.

l. Block 12 - Leave blank.

m. Block 13 - Leave blank.

n. Block 14 - Enter the UIC of the activity where the material is located. If no UIC is available, enter the complete name and mailing address of the activity plus the UIC of the reporting activity shown in Block 7.

o. Block 15 - Reimbursement Requirement. If reimbursement is required, except for the exchange/sale and foreign equity property, enter the number 1 in the YES box. If reimbursement is not required, enter the number 2 in the NO box. DO NOT USE THE LETTER "X".

p. Block 16 - Leave blank.

q. Block 17 - Leave blank.

r. Block 18a - Line items shall be numbered in numerical sequence beginning with serial number 001 for the first item reported on a given day (or a given Report Number, Block 1). There is to be only one Item Number 001, 002, etc. on a given day including instances of multiple SF 120s (resulting from different P-1 items, medical equipment, or just too many items to be listed on one SF 120).

s. Block 18b - The following is required (plus any other pertinent data, particularly that which would prevent redistribution when unsuited for the requirements of the receiving activity):

- (1) National Stock Number (NSN) if applicable;
- (2) USN number;
- (3) Equipment Code (EC);
- (4) Type/capacity;
- (5) Make/model;
- (6) Year manufactured;
- (7) Vehicle ID (chassis, serial) number;
- (8) Accumulated mileage (or operating hours for O-Z equipment)
- (9) Estimated cost to place in B-5 condition.

t. Block 18c - Enter the Federal Condition Code (see Appendix I).

u. Block 18d - Enter the standard unit of issue.

- v. Block 18e - Enter the number of units reported.
- w. Block 18f - Enter the standard unit cost (acquisition cost).
- x. Block 18g - Enter the total line item value if quantity is more than one.
- y. Block 18h - Leave blank.
- z. At the top of the form, complete Page \_\_\_\_ of \_\_\_\_ pages.

REPORT OF EXCESS PERSONAL PROPERTY				1. REPORT NO.	2. DATE MAILED	3. TOTAL COST
STANDARD FORM 120 REV. APRIL 1957 GEN. SERV. ADMIN. FPMR (41 CFR) 101-12.311				N12345-5163-K	15 Jun 95	\$
4. TYPE OF REPORT	(Check one only of "a," "b," "c," or "d")	a. ORIGINAL b. CORRECTED	c. PARTIAL W/D d. TOTAL W/D	(Also check "e" and/or "f" if appropriate)		e. OVERSEAS f. CONTRACTOR
5. TO (Name and Address of Agency to which report is made) THRU Commander, Atlantic Division, Code 12 NAVFACENGCOM, Norfolk, VA 23511-2699				6. APPROP. OR FUND TO BE REIMBURSED (If a)		
7. FROM (Name and Address of Reporting Agency) Naval Air Station Anywhere				8. REPORT APPROVED BY (Name and Title) LT N. Charge LT. CEC. USN		
9. FOR FURTHER INFORMATION CONTACT (Title, Address and Telephone No.) LT.N. Charge DSN 123-4567 or COM (111) 456-4567				10. AGENCY APPROVAL (If applicable)		
11. SEND PURCHASE ORDERS OR DISPOSAL INSTRUCTIONS TO (Title, Address and Telephone No.) See Block #7				12. GSA CONTROL NO.		
13. FSC GROUP NO.	14. LOCATION OF PROPERTY (If location is to be abandoned give date)		15. REIM/REGO YES NO	16. AGENCY CONTROL NO.		17. SURPLUS REL. DATE
	N12345 NAS Anywhere		2			
18. EXCESS PROPERTY LIST			ACQUISITION COST			
ITEM NO. (a)	DESCRIPTION (b)	COND. (c)	UNIT (d)	NUMBER OF UNITS (e)	PER UNIT (f)	TOTAL (g)
001	FSN: 2320 USN: 94-02419 EC: 0313 Type/Capacity: Truck, Cargo Pickup GVW 4800 Make/Model: Dodge/D150 Year Mfg: 1978 Vehicle ID#D14BB8S173625 Accum Miles: 73929 Est. Cost to place in B-5 Condition: \$3800 ESTIMATE TO RETURN 94-02419 to B-5 Condition 1. R&R ENGINE & OVERHAUL 2. R&R TRANSMSSION & OVERHAUL 3. REPLACE BOTH FRONT BRAKE ROTORS 4. REPLACE FRONT BRAKE PADS & OVERHAUL CALIPERS 5. REPLACE REAR BRAKE SHOES & WHEEL CYLINDERS 6. R&R & UPHOLSTER SEAT 7. REPAIR BODY DAMAGE LEFT FRONT FENDER 8. REPLACE TAILGATE 9. REPLACE TIE ROD ENDS 10. REPLACE BOTH LOWER BALL JOINTS 11. ALIGN FRONT END 12. PREPARE VEHICLE FOR PAINT & PAINT VEHICLE	B-X	EA	1	4130	4130
						\$925.00 \$750.00 \$300.00 \$100.00 \$ 70.00 \$100.00 \$500.00 \$375.00 \$ 50.00 \$225.00 \$ 50.00 \$355.00 \$3800.00

STANDARD FORM 120 REV.  
APRIL 1957 EDITION

(Use Standard Form 120A for Continuation Sheets)  
NSN 7540-00-634-4074

120-105

PREVIOUS EDITION USABLE

Sample SF Form 120  
Figure 2-3.

**2.13.4 Disposition of Serviceable Excess Transportation Equipment (Shore Activities).** Excess equipment determined by the holding activity to be in condition (see Appendix I) other than H or S (Supply Condition Codes) and/or 3, 6, 9, X or S (Disposal Condition Codes) are considered to have the potential for further use and redistribution within the Navy. The holding activity shall forward a SF 120, Report of Excess Personal Property, prepared in accordance with paragraph 2.12.3, to the appropriate TEMC. The report may be mailed as an original copy or sent by facsimile machine. Such equipment shall be screened by the TEMC upon receipt of the SF 120. If transfer to another activity supported by the TEMC is warranted, instructions shall be issued within 15 days from receipt of the SF 120 to the holding activity. Prior to shipment, a physical condition check should be made by the receiving activity to avoid the shipping costs for equipment that is in unsatisfactory condition. The SF 120 containing undistributed excess items shall be returned to the original holding activity with instructions to transfer excess items to the appropriate DRMO. The holding activity shall process property record disposition actions in accordance with paragraph 2.12.7.

**2.13.5 Disposition of Unserviceable Excess Transportation Equipment.** Excess equipment determined by the holding activity to be in Supply Condition Codes H or S is considered to be unsatisfactory for further Navy use. Equipment not in usable condition is to be turned in to the appropriate DRMO directly by the holding activity on DD Form 1348-1 (DoD Single Line Item Release/Receipt Document) and in accordance with local disposal procedures. The DRMO also requires the equipment maintenance records and the information listed on the SF 120.

**2.13.6 Disposition by Survey.** A survey is the procedure required when Navy property or Defense Logistics Agency material in Navy custody is lost, damaged or destroyed (except in incoming shipments). Processing disposals by survey, a complex and costly procedure, requires reference to NAVSUP Manual Vol. II, Section VI as amended by NAVSUPNOTE 7200, Subj: Accounting and Reporting of Government Property Lost, Damaged or Destroyed, of 29 Aug 1980.

**2.13.7 CASEMIS Inventory Record Adjustment.** If excess equipment is transferred to another activity, the record holding TEMC shall update the CASEMIS inventory records to reflect the transfer. For excess CESE transferred to the DRMO, the holding activity shall complete the reporting action described herein within 15 days from disposition to ensure that COMNAVFACENGCOM inventory records properly reflect all disposal actions of CESE. Activities with direct access to CASEMIS shall update the inventory records by direct entry of the equipment disposition data elements (U.S. Navy Registration Number and Status Code Z) or by file transfer of the data. Activities without direct access to CASEMIS shall report equipment disposition data by fax or mail to their responsible TEMC using the web-provided load sheet or a similar formatted form. SOUs shall report equipment dispositions to NFELC Port Hueneme by providing a signed copy of the DD Form 1348-1 via a fax or mail.

## 2.14 **Warranties and Deficiencies**

2.14.1 **Warranties-General.** Warranties protect the Government by guaranteeing equipment against defective material, poor workmanship and inadequate design. Warranties vary with contractor and contracting office. However, the warranty period is seldom less than 12 months or 12,000 miles. In addition, any warranty given to the general public by a contractor is almost always passed on to the Government. The contractor is usually responsible for parts and labor costs incurred in correcting warranty defects on equipment within the United States (all 50 states). Outside the U.S., the contractor is generally responsible for only parts replacement and not labor. Sources for specific warranty provisions include: Equipment labels, equipment manuals, dealers, contractors, and the responsible TEMC. Clarification on disputed warranty provisions can be obtained from NFELC Port Hueneme. Recourse for pursuing warranty defects that a contractor is reluctant to correct is included in the Quality Deficiency Report (QDR) process defined in the following paragraphs.

2.14.2 **Deficiencies (includes guidance on QDR submissions).** Activities shall inspect all new CESE and identify any deficiencies. Deficiencies shall fall into one of the following categories:

- a. Theft and damage deficiencies sustained in shipment. (2.14.3)
- b. Safety deficiencies. (2.14.4)
- c. Warranty deficiencies. (2.14.5)
- d. Contract deficiencies. (2.14.6)
- e. Technical documentation deficiencies. (2.14.7)

2.14.3 **Theft and Damage Deficiencies Sustained in Shipment.** The Report of Discrepancy (ROD), Standard Form 364, is used to report shortages in shipment and transportation damages. The ROD is processed through the local supply department. The supply department shall seek appropriate resolution of the deficiency with the shipper. Shipping deficiencies and the ROD process are governed by NAVSUPINST 4610.33 entitled Reporting of Transportation Discrepancies in Shipments, and NAVSUPINST 4440.179 entitled Report of Discrepancy (ROD).

2.14.4 **Safety Deficiencies.** All CESE developing deficiencies affecting safe operation shall be immediately removed from service until corrective action has been completed. Safety deficiencies shall be reported on a Quality Deficiency Report (QDR), Standard Form 368 (Figure 2-5) to CO NNELC Port Hueneme, 1000 23rd Avenue, Building 1000, Port Hueneme, CA 93043-4410 with a copy to the responsible TEMC. A blank copy of this form is available on the TEMC-provided website. In lieu of a QDR form, the requested information may be stated in any type of written correspondence. QDR information detailing safety deficiencies can be faxed to NFELC Port Hueneme at (805) 982-5806 or DSN 551-5806. NFELC Port Hueneme shall identify and notify the TEMCs and other Navy activities affected by the safety deficiency. After initial reporting of safety deficiencies, activities shall pursue the same action identified for warranty or contract deficiencies. In-house repairs to correct a safety deficiency shall have the manufacturer's authorization.

2.14.5 **Warranty Deficiencies**. Activities shall initiate the following corrective action for CESE warranty deficiencies:

a. **CESE in the U.S.** Activities located in the U.S. shall contact authorized representatives of the contractor for warranty deficiency correction. The activities shall report the warranty deficiencies and their efforts to resolve the deficiency on a QDR as outlined in paragraph 2.14.9. Activities having shop facilities shall correct minor warranty deficiencies in-house when the total cost to the Government to transport the equipment to and from the dealer exceeds the total cost of the warranty claim, or when the delay in obtaining warranty service through the dealer shall result in unacceptable downtime. Activities making in-house warranty repairs cannot submit a claim against the contractor unless the contractor has authorized the repairs as part of the contractor's warranty obligation.

PRODUCT QUALITY DEFICIENCY REPORT										<input type="checkbox"/> CATEGORY I		<input type="checkbox"/> CATEGORY II	
1a. FROM (Originator) Commanding Officer Naval Air Station Calhoun TX 75943					2a. TO (Screening point) Construction Engineering Support Office Code 153 1000 23rd Ave Port Hueneme CA 93943-4301								
1b. NAME, TELEPHONE NO. AND SIGNATURE Alfonse Gomez (691) 448-9612					1c. DATE 4/12/95		2b. NAME, TELEPHONE NO. AND SIGNATURE Carl Bailey (614) 328-9501					2c. DATE 4/21/95	
3. REPORT CONTROL NO. N00594-95-0013		4. DATE DEFICIENCY DISCOVERED		5. NATIONAL STOCK NO. (NSN)		6. NOMENCLATURE Truck, Firefighting Aircraft Rescue							
7a. MANUFACTURER/CITY/STATE Joe Boaks Manufacturing Edge Mont Oklahoma				7b. MFRS. CODE 0735		7c. SHIPPER/CITY/STATE Same as 7a.				7d. MFRS. PART NO. Zf 12439			
9. SERIAL/LOT/BATCH NO. N/A		10a. CONTRACT NO. N40001-94-C-2891		10b. PURCHASE ORDER NO. MIPR N 08685		10c. REQUISITION NO. N/A		10d. GBL NO. 94-1251					
11. ITEM <input checked="" type="checkbox"/> NEW <input type="checkbox"/> REPAIRED/ OVERHAULED		12. DATE RECD. MFRD. RE- PAIRED, OR OVERHAULED 1/95		13. OPERATING TIME AT FAILURE 25 hrs		14. GOVERNMENT FURNISHED MATERIAL <input type="checkbox"/> YES <input type="checkbox"/> NO		15. QUANTITY 1					
16. DEFICIENT ITEM WORKS ON/WITH		a. END ITEM (Aircraft, motor, etc.)		(1) TYPE/MODEL/SERIES 1000 GPM Truck Fire Crash		(2) SERIAL NO. 1		(3) PART NO. 48136-743-94-12		(4) SERIAL NO.			
b. NEXT HIGHER ASSEMBLY		(1) NATIONAL STOCK NO. (NSN)		(2) NOMENCLATURE		(3) PART NO.		(4) SERIAL NO.					
17. UNIT COST \$ 150,000.00		18. ESTIMATED REPAIR COST \$ 3500.00		19a. ITEM UNDER WARRANTY <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> KNOWN		19b. EXPIRATION DATE 1/96							
20. WORK UNIT CODE/EIC (Navy and Air Force Only.)													
21. ACTION/DISPOSITION <input type="checkbox"/> HOLDING EXHIBIT FOR _____ DAYS <input type="checkbox"/> RELEASED FOR INVESTIGATION <input type="checkbox"/> RETURNED <input type="checkbox"/> DISPOSED <input checked="" type="checkbox"/> REPAIRED <input type="checkbox"/> OTHER (Explain in item 22)													
22. DETAILS (Describe, to best ability, what is wrong, how and why, circumstances prior to difficulty, description of difficulty, cause, action taken, including disposition, recommendations. Attach copies of supporting documents. Continue on separate sheet if necessary.) 1. After vehicle is operated for approximately 15 minutes, loss of power steering occurs. 2. Solution - Install a larger hydraulic tank and an auxillary in line cooler.													
23. LOCATION OF DEFICIENT MATERIAL Bldg 480 NAS CALHOUN													
24a. TO (Action Point) Same as 2a.						25a. TO (Support Point) (Use items 26 and 27 if more than one)							
24b. NAME, TELEPHONE NO. AND SIGNATURE						24c. DATE							
24d. NAME, TELEPHONE NO. AND SIGNATURE						24e. DATE							
26a. TO (Support Point)						27a. TO (Support Point)							
26b. NAME, TELEPHONE NO. AND SIGNATURE						26c. DATE							
26d. NAME, TELEPHONE NO. AND SIGNATURE						26e. DATE							
26f. NAME, TELEPHONE NO. AND SIGNATURE						26g. DATE							

Form 368, Quality Deficiency Report  
Figure 2-4.

b. CESE outside the U.S. Usually contractors' warranty obligation outside of the U.S. is limited to providing replacement parts only. Activities shall contact contractors directly to request replacement parts needed for the activity to correct the deficiencies. The activities shall report the warranty deficiencies and their efforts to resolve the deficiency on a QDR as outlined in paragraph 2.14.9.

2.14.6 **Contract Deficiencies.** CESE with contract deficiencies can fall into one of two cases: Case (1) Contractor has provided equipment that does not meet contract requirements and, therefore, the contractor has an obligation to correct the deficiency (e.g. a latent defect not detected by the government inspector); or, Case (2) Contractor has provided equipment that meets contract requirements but the equipment does not meet the activity's requirements. In case (1), the contractor has a responsibility to correct the deficiency and the activity shall submit a QDR and initiate the same action specified for warranty deficiencies in paragraph 2.14.5 above. In case (2), the contractor has no obligation to correct the deficiency and the activity has the responsibility for any action or cost associated with correction of the deficiency. Activities shall complete QDRs for case (2) deficiencies in accordance with paragraph 2.14.9 so future contracts can be written to include all Navy requirements. In some circumstances an activity may not be able to determine whether a contract deficiency is case (1) or case (2). In this situation the QDR should so state and ask for assistance from NFELC Port Hueneme 15L2 in making this determination.

2.14.7 **Technical Documentation Deficiencies.** In those cases where technical manuals (operators, repair or parts) are not received with the equipment or are incomplete or incorrect, the receiving activity shall, within 10 days, complete and forward a QDR report. The original QDR shall be forwarded directly to Officer in Charge, NFELC Port Hueneme, 1000 23rd Avenue, Bldg. 1000, Port Hueneme, CA 93043-4410. A copy of the QDR shall be forwarded to the responsible TEMC. Note: Only one set of manuals shall be shipped for each type of vehicle.

2.14.8 **Assistance with CESE Deficiencies.** Activities unable to resolve warranty or contract deficiencies shall so indicate on the QDR report. NFELC Port Hueneme shall initiate further action to resolve the deficiencies by communicating with the contractor and the contracting officer. NFELC Port Hueneme shall advise the QDR originator of progress in this regard. Unless otherwise directed, activities shall not communicate directly with the contracting officer. In order for NFELC Port Hueneme 15L2 to provide assistance in resolving QDR deficiencies, the QDR originator must fill out the QDR report completely per paragraph 2.14.9. The originator must be clearly identified on the QDR report with an accurate phone number and address. The TEMCs shall assist with coordinating communication between NFELC Port Hueneme 15L2 and activities when requested either by an activity or NFELC Port Hueneme. This coordination can be particularly important in dealing with CESE deficiencies at activities overseas.

2.14.9 **Preparation and Distribution of Quality Deficiency Report (QDR), Standard Form 368.** When the type of deficiencies noted in paragraph 2.14.4, 2.14.5 and 2.14.6 are discovered, where appropriate, activities shall complete QDR reports as indicated below. If the form is not available, the requested information may be stated in any type of written correspondence. Completeness and accuracy are essential for processing the QDR in a timely manner and for providing all necessary action.

a. Completeness. Section 1 of the QDR is to be completed by the activity. The activity shall provide information for blocks: 1a, 1b, 2a, 3, 4, 6, 7, 8, 10, 11, 12, 13, 15, 15b, 15c, 16a (1) and (2), 16b (2) and (3), 17, 18, 19, 20, 21 (as applicable), and 22. Additional sheets may be added to the QDR report when there is insufficient space in the blocks provided. For trucks, include chassis manufacturer and chassis identification number as well as the body manufacturer and body identification number. Include USN registration number(s) in blocks 16a (1) and (2).

b. Distribution. The originating activity shall date and assign a serial number to each QDR report and distribute NFELC Port Hueneme with copy to TEMC.

OIC, NFELC Port Hueneme	FAX:
1000 23rd Avenue, Bldg. 1000	(805) 982-3395
Port Hueneme, CA 93043-4410	DSN 551-3395
If you facsimile a copy, also mail the original.	

c. Final Resolution. NFELC Port Hueneme and the TEMCs shall coordinate action until the QDR is resolved. NFELC Port Hueneme 15L2 shall provide notification of the final resolution of major deficiencies to both TEMCs, NAVFAC, and to the affected activities.

2.14.10 **Additional QDR Guidance.** It is important that the QDR state what corrective action has been taken and the status of this action. The status shall indicate names of dealers, factory branch offices or manufacturers contacted, and action resulting from such contacts. If the same deficiency is found on several units of similar equipment, only one QDR has to be submitted, referencing each of the several units involved. Similarly, if several deficiencies are found on one unit of equipment, only one QDR has to be submitted. Submit an additional QDR, referencing previous applicable QDR report(s), if a deficiency recurs on a previously repaired or replaced part. For deficiencies that are not satisfactorily corrected when the contractor is responsible, the QDR shall contain the name and address of the manufacturer's representative who did not comply with the terms of the warranty or contract, and the reasons for noncompliance. The Navy Quality Deficiency Reporting Program is governed by SECNAVINST 4855.6.



## 2.15 **Painting And Identification Markings**

### 2.15.1 **Painting Specifications, Standards and Authorized Colors**

a. Vehicle and Equipment Colors and Markings for Shore CESE. Consideration should be given to treating and painting all Navy transportation equipment (excluding GSA) in accordance with MIL-STD 1223 and all specifications and standards referenced within MIL-STD 1223. The colors of the paint shall match the color chips in FED-STD-595B unless otherwise specified. Required colors and associated markings are reflected in Appendix J, Figure J-3. Activities may deviate from this policy and use the manufacturer's standard light color, especially where there is a need to have the vehicles blend in with other vehicles in the various surroundings. Use of manufacture's standard light color could also increase the market value of NWCF vehicles during disposal. The use of GSA multiple colored vehicles is authorized.

b. Authorized Colors for NCF,NCTCs and SOUs. Colors of all paint used on CESE shall provide the best available color match of the following color chips in Federal Standard No. 595B.

Yellow	Number 13538	White	Number 17886
Green	Number 14064	Gray	Number 16187
Sand	Number 33303	Red	Number 11105
Black	Number 17038		

c. Waterborne Equipment (NCF,NCTCs and SOUs). Waterborne equipment, which includes turntables, propulsion units, and winches, shall be painted gray, Color No. 16187.

d. Painting Other Vehicles and Equipment (NCF,NCTCs and SOUs). These assets shall be painted lusterless green, Color No. 14064 (NSN 8010-00-298-2295).

e. Special Requirements for CARC (NCF,NCTCs and SOUs). Some new equipment introduced to the NCF and SOU communities has been painted with Chemical Agent Resistant Coating (CARC). Most CARC-painted vehicles in the NCF may be identified by "CARC" printed near the equipment data plate. CARC-painted equipment must be repainted only with CARC. **STRICT SAFETY PRECAUTIONS WHILE USING CARC PAINT MUST BE ADHERED TO.** Safety precautions and procedures for touch-up and repainting of CARC equipment are found in Appendix J.

f. Camouflage Painting of CESE (NCF,NCTCs and SOUs). Unless directed by the responsible Theater Commander or higher authority, CESE shall not be painted camouflage. When camouflage painting is directed, it shall be the three-color camouflage CARC, using the applicable patterns and combinations of colors suggested

for various seasons and climatic regions described in the *U.S. Marine Corps Camouflage Paint Patterns*, TM-4750-15/2-2. Appendix J contains additional guidance.

g. Desert Painting of CESE (NCF,NCTCs and SOUs). Unless directed by the responsible theater commander or higher authority, CESE shall not be painted Desert colors. Appendix J contains additional guidance.

<u>Color</u>	<u>Quantity</u>	<u>NSN</u>
Sand	1 GL	8010-00-111-7988
Sand	5 GL	8010-00-111-8336
Olive Drab	1 GL	8010-00-111-7940
Olive Drab	5 GL	8010-00-111-8069
Green, Forest	1 GL	8010-00-111-8382
Green, Forest	5 GL	8010-00-111-7937
Field Drab	1 GL	8010-00-111-7943
Field Drab	5 GL	8010-00-111-8129
Green, Light	5 GL	8010-00-111-8007
Brown, Earth	5 GL	8010-00-111-8338
Black	1 GL	8010-00-111-8005
Black	5 GL	8010-00-111-8356
Yellow, Earth	1 GL	8010-00-111-7968

2.15.2 **Repainting Requirements.** Transportation equipment shall be repainted when inadequate protection is afforded against rust or corrosion. Equipment shall not be repainted merely to change the color or gloss characteristics if the finish is serviceable. Spot painting, in lieu of completely refinishing previously painted sections, should be done whenever practicable. Bare surfaces of body sections and sheet metal exposed by deterioration of paint or by accidents shall be spot painted immediately to prevent deterioration of the metal. When using any paint product, particularly lead-base paint, all current health and safety regulations shall be strictly enforced. Contact the activity health and safety department/office to obtain all applicable regulations and instructions pertaining to a safe painting environment.

2.15.3 **Recruiting Vehicles.** The marking of vehicles for recruiting purposes shall be as prescribed by the Bureau of Naval Personnel (BUPERS) and as approved by CNO. Those vehicles may display signs and/or slogans in accordance with Instructions promulgated by BUPERS or Naval Recruiting Command.

2.15.4 **Vehicle Identification.** NFELC Port Hueneme will assign a unique USN registration number to each Navy-owned/non-GSA leased CESE unit at the time of acquisition. Normally, this number will be displayed either directly on the unit or on a Navy license plate affixed to the unit. Regardless of exterior markings, the USN number of Navy-owned equipment shall be permanently exhibited (via indelible pen, engraved inscription or mounted nomenclature plate) on an interior surface of the unit (such as on the underside of the trunk lid or engine compartment, on a door jam or in the glove compartment); leased units shall not be marked in this manner.

a. License Plates.

(1) Navy-owned and commercially leased (non-GSA) vehicles and equipment shall display standard Navy license plates as required by local law or custom. As a minimum, and unless contrary to local law, host nation mandate or status of forces agreement, Navy-owned/non-GSA leased vehicles must display standard Navy plates when operated on public roads or on roadways accessible to the general public or to the general population of the activity/base. In general, this requirement applies to Alpha Code A-P equipment and tow-behind or self-propelled equipment in remaining Alpha Codes that is utilized on roadways (such as street sweepers, sewer vacuum trucks, rubber tired construction equipment and truck mounted mobile cranes). Self-propelled equipment shall display standard Navy plates front and rear; tow-behind units shall display plates on the rear only. In areas where Navy license plates cannot be used (such as the National Capital Region and some foreign countries), appropriate local plates/markings must be obtained and applied by the using activity. Plating of GSA-owned vehicles leased by the Navy is the responsibility of GSA; these vehicles shall display GSA license plates.

(2) Standard Navy license plates are flat, with digitally produced graphics, watermarks and holograms to deter counterfeiting. The standard Navy plates have blue lettering on a white reflective background (Shore) or black lettering on a non-reflective olive drab background (Active Force) and display the words "US GOVERNMENT," "FOR OFFICIAL USE ONLY" AND "NAVY," as well as the USN number of the unit. No other plate designs are authorized and no additional seals, emblems, logos, bar codes, etc. may be added to the standard plate. Vehicles/equipment displaying standard Navy plates do not require any other identification markings, as the digital plates meet mandatory marking requirements.

(3) Standard Navy plates shall be installed on all new procurement equipment when that equipment is required to display plates as described above. Embossed/stamped plates installed on equipment already in inventory may continue to be used until disposal of the equipment, or loss, theft, damage or destruction of the plate itself. Units that currently display stenciled markings in lieu of plates do not require plating, unless repainted.

(4) Navy plates must be procured from the mandatory Federal supply source, which is the Federal Prison Industries (UNICOR). Requests to procure plates

from other sources must be approved by UNICOR in advance, via issuance of a waiver to NAVFAC Headquarters. All individuals ordering license plates must be government employees, authorized in advance by NAVFAC Headquarters to place the order. Procedures for designating authorized order personnel and ordering plates may be obtained from the responsible TEMC.

(5) License plates for equipment procured by NFELC Port Hueneme with OPN funds are paid for from a central NAVFAC Headquarters account; this includes plates for NWCF passenger carrying vehicles. NAVFAC also pays for plates for equipment acquired by Navy Appropriated fund activities outside of normal procurement channels (such as via commercial lease/lease-purchase, inter-agency transfer, donation, withdrawal from DRMO, etc.), and for passenger carrying vehicles acquired by NWCF activities outside of normal channels. Plates for equipment procured by NFELC Port Hueneme outside of the OPN program are paid for from the administrative charge NFELC Port Hueneme applies to procurements. Plates for equipment not procured by NFELC Port Hueneme must be ordered direct from UNICOR and paid for by the end user, unless prior arrangements have been made with NFELC Port Hueneme.

(6) All plates ordered by NFELC Port Hueneme are shipped direct to the end user; they are not shipped with or installed on new procurement vehicles. Therefore, end-users must ensure that plates received are installed on the proper vehicle, that property records are properly annotated and that accurate plate-to-vehicle/VIN data is entered into CASEMIS. License plates shall not be switched between vehicles.

(7) Navy license plates shall not be installed on POVs, contractor owned equipment or vehicles leased from GSA.

(8) Activities will report lost, stolen or missing plates to the local Security Department and the responsible TEMC upon notice of the loss. USN numbers corresponding to missing plates may be re-utilized; replacement plates may be acquired by specifying the desired USN number when ordering. The TEMC will retain a list of all missing plate numbers.

(9) Plates shall be removed from Navy-owned equipment and destroyed prior to final disposition of the equipment (e.g., turn in to DRMO, sale or return to lease contractor). The USN number of the disposed unit will be retired at the time of disposal.

(10) Requests for deviation/exemption from the above requirements must be submitted to CNO (N46), via the responsible TEMC and NAVFAC Headquarters. The request must include justification supporting the request and a description of the proposed alternate method of vehicle identification. For GSA-owned vehicles, requests to deviate from identification requirements must be addressed to GSA, via the responsible TEMC and NAVFAC Headquarters.

b. Other Markings.

(1) Dedicated off-road equipment (such as railroad equipment, tracked equipment and construction equipment that is tailored to the job site) is not required to display license plates unless required by local law, host nation mandate or status of forces agreement. In lieu of license plates, equipment in these categories must display Navy markings in the sizes/locations shown in Appendix J, Figure J-6. Normally, the size of the letters and numerals shall be 3 inches or as otherwise depicted in Appendix J; however, size may be varied to suit available space for smaller surfaces.

(2) Identification Markings shall be displayed as follows:

- In general, markings shall be applied to the rear and both sides of equipment, and shall be visible regardless of the position of any attachments or devices installed on the unit (such as hydraulic tailgates, tool boxes/bins, pony motors, light sets, antennae, etc.).
- The DoD component identification “U. S. NAVY” (top line), registration number (middle line), and legend “FOR OFFICIAL USE ONLY” (bottom line) shall be displayed on the sides of the unit.
- The DoD component identification “U. S. NAVY” and the registration number shall be displayed on the rear of the unit, either in a single line equidistant from the vehicle’s outside edges, with U.S. Navy on the left and the USN registration number on the right, or in an appropriate location so it is clearly visible.

(3) Marking Materials. Markings shall be applied using one of the following type materials:

(a) Paint. Use gloss enamel. Vehicles painted with CARC, only CARC paint shall be used for markings.

(b) Decal. (Non-reflectorized). Use pressure sensitive elastomeric film conforming to Military Specification MIL-M-43719C.

(c) Decal. (Reflectorized). Use reflectorized pressure sensitive film conforming to American Society of Testing Materials (ASTM) D 4956, Type I Class 3. Wide-angle prismatic retro reflective markings shall conform to Type IV of ASTM D 4956 Class 1. Reflective materials shall meet ASTM D 4956 Type IV.

(d) Pressure Sensitive Vinyl (NCFs, NCTCs and SOUs). This decal method involves application directly on the equipment of nonreflectorized pressure-sensitive elastomeric film or to reflectorized pressure-sensitive film. The decals may be procured from NNFELC Port Hueneme, NNFELC Gulfport, or from commercial sources. Requisitioning data for black pressure-sensitive vinyl numerals and letters is listed below.

<u>Item</u>	<u>Stock Number</u>	<u>Description</u>
1. 3" high 1/2" stroke	7690-01-031-9568	Numeral <b>0</b>
2. 3" high 1/2" stroke	7690-01-031-9559	Numeral <b>1</b>
3. 3" high 1/2" stroke	7690-01-031-9560	Numeral <b>2</b>
4. 3" high 1/2" stroke	7690-01-031-9561	Numeral <b>3</b>
5. 3" high 1/2" stroke	7690-01-031-9562	Numeral <b>4</b>
6. 3" high 1/2" stroke	7690-01-031-9563	Numeral <b>5</b>
7. 3" high 1/2" stroke	7690-01-031-9564	Numeral <b>6</b>
8. 3" high 1/2" stroke	7690-01-031-9565	Numeral <b>7</b>
9. 3" high 1/2" stroke	7690-01-031-9566	Numeral <b>8</b>
10. 3" high 1/2" stroke	7690-01-031-9567	Numeral <b>9</b>
11. 3" high 1/2" stroke	7690-01-031-9553	Letter <b>U</b>
12. 3" high 1/2" stroke	7690-01-031-9551	Letter <b>S</b>
13. 3" high 1/2" stroke	7690-01-031-9546	Letter <b>N</b>
14. 3" high 1/2" stroke	7690-01-032-0732	Letter <b>A</b>
15. 3" high 1/2" stroke	7690-01-031-9554	Letter <b>V</b>
16. 3" high 1/2" stroke	690-01-031-9557	Letter <b>Y</b>
17. 1" high 5/32" stroke	7690-00-329-0538	<b>FOR OFFICIAL USE ONLY</b>
18. 1-1/2" high 3/16" stroke	7690-00-857-9737	Numeral <b>0</b>
19. 1-1/2" high 3/16" stroke	7690-00-857-9728	Numeral <b>1</b>
20. 1-1/2" high 3/16" stroke	7690-00-857-9729	Numeral <b>2</b>
21. 1-1/2" high 3/16" stroke	7690-00-857-9730	Numeral <b>3</b>
22. 1-1/2" high 3/16" stroke	7690-00-857-9731	Numeral <b>4</b>
23. 1-1/2" high 3/16" stroke	7690-00-857-9732	Numeral <b>5</b>
24. 1-1/2" high 3/16" stroke	7690-00-857-9733	Numeral <b>6</b>
25. 1-1/2" high 3/16" stroke	7690-00-857-9734	Numeral <b>7</b>
26. 1-1/2" high 3/16" stroke	7690-00-857-9735	Numeral <b>8</b>
27. 1-1/2" high 3/16" stroke	7690-00-857-9736	Numeral <b>9</b>
28. 1-1/2" high 3/16" stroke	7690-00-857-9722	Letter <b>U</b>
29. 1-1/2" high 3/16" stroke	7690-00-857-9720	Letter <b>S</b>
30. 1-1/2" high 3/16" stroke	7690-00-857-9715	Letter <b>N</b>
31. 1-1/2" high 3/16" stroke	7690-00-857-9702	Letter <b>A</b>
32. 1-1/2" high 3/16" stroke	7690-00-857-9723	Letter <b>V</b>
33. 1-1/2" high 3/16" stroke	7690-00-857-9726	Letter <b>Y</b>

(4) Marking Colors. Painted and elastomeric film color numbers shall conform to FED-STD-595B. Reflective colors shall conform to ASTM D 4956. Marking colors shall be:

(a) On vehicles or equipment painted yellow, use numerals and letters in reflective black, Type I, Class 1, No. 17038.

(b) On vehicles painted white, individual letters and numbers shall be the reflective type, conforming to Type I, Class 3, Blue of ASTM D 4956.

2.15.5 **Special Markings for Aviation and Ground Fuel Servicing Vehicles.** Special markings are required on fuel and oil servicing trucks and trailers to minimize the possibility of replenishing aircraft systems with an improper grade of fuel or oil. Precautionary markings are also required to provide sufficient warnings regarding the content of these vehicles. Type IV, Class 1 wide-angle prismatic reflective markings as outlined in ASTM D 4956 shall be used. Markings shall be 6-inch reflective red alphanumeric characters on an 8-inch prismatic reflective white background. Except as noted (paragraph 2.15.5.e.), painted markings, in lieu of reflective markings, are not authorized.

a. **Flammable.** Apply the word "FLAMMABLE", using 6-inch red reflective letters on an 8-inch white prismatic reflective background, to the front, rear and each side of the vehicle tank/semi trailer.

b. **No Smoking Warning.** Apply the words, "NO SMOKING WITHIN 50 FEET", using 6-inch red reflective letters on an 8-inch white prismatic reflective background to each side and the rear of the vehicle tank/semi trailer.

c. **Product Identification.** Vehicle tanks/semi trailers shall be marked on each side and the rear with product designations. In addition, refuelers used to issue approved NATO aviation fuels shall be marked with the NATO symbol for the product being dispensed. NATO symbols shall be centered below each product designation (rear and sides). All lettering shall be in 6-inch red reflective letters imposed on an 8-inch white prismatic reflective background. Product designation markings and NATO symbols shall be as follows.

<b><u>Product</u></b>	<b><u>Marking</u></b>	<b><u>NATO Symbol</u></b>
Aviation gasoline,		
Grade 100/130 Octane	AVGAS 100/130	F-18
Grade 115/145 Octane	AVGAS 115/145	F-22
Jet fuel, Grade JP-4	Jet Fuel JP-4	F-40
Jet fuel, Grade JP-5	Jet Fuel JP-5	F-44
Jet Fuel, Grade JP-8	Jet Fuel JP-8	F-34
Motor gasoline,		
Leaded	MOGAS Leaded	
Unleaded	MOGAS Unleaded	
Diesel fuel	DIESEL FUEL	
Lubricating oil, Aviation	AVLUBE	
Lubricating oil, motor	LUBE OIL	
Heating fuel	HEATING FUEL	

**NOTE:** Refuelers and semi trailers used solely as defueling units shall be marked JET FUEL or AVGAS (omitting grade codes and NATO symbols).

d. Aviation and ground fuel vehicles, refuelers and defuelers and waste fuel/oil trucks shall display the appropriate Department of Transportation (DoT) placard depicted in Appendix J, Figure J-4.

(1) The appropriate identification numbers to be displayed on the DoT placard shall be:

<b><u>PRODUCT CONTENT</u></b>	<b><u>I.D. NO</u></b>
Jet Fuels (All)	1863
Diesel/Heating Fuels (All)	1993
Gasolines (All)	1203
Oils (Lubricating)	1270

(2) If liquid being transported is not listed here, refer to 49 CFR for appropriate ID number.

e. Emergency switches and push/pull devices shall be clearly marked "EMERGENCY SHUTOFF" in 2-inch lettering. The method of operation shall be indicated by a clearly visible arrow or by the word "PUSH" or "PULL" as appropriate. Red on white reflective or painted marking may be used. Whatever the case, emergency markings shall be clearly visible at all angles to the surface being viewed.

2.15.6 **Aircraft/Fuel Servicing and Aviation Mobile Ordnance Equipment.** The front and rear bumpers may be painted black, and 4-inch stripes of yellow reflective sheeting (wide-angle prismatic ASTM D 4956 Type IV, Class 1) shall be applied 4 inches apart at an incline of 45 degrees from the left and right of the center vertical starting pattern. The painting of the bumpers is optional.

2.15.7 **Temporary Identification of Vehicles Used on Runways.** Vehicles not ordinarily used on landing areas, runways, taxiways, or peripheral roads must be readily identifiable whenever they travel over any part of the landing area. These vehicles are required to carry a flag on a staff attached to the vehicle. This flag shall be at least 3-foot square and shall consist of 1-foot squares of alternate international orange and white on both sides.

2.15.8 **Warning Stripes for Vehicles, Construction, and Allied Equipment.** Variations in sizes and configurations as well as safety requirements necessitated by local conditions prohibit establishment of uniform instructions for the application of warning stripes. Such marking shall be in accordance with Note (1) to Appendix J, Figure J-3 as a minimum.



2.15.9 **Hazardous Materials and Dangerous Articles.** Navy vehicles used for transporting hazardous materials and other dangerous articles shall be marked and operated in accordance with the effective edition of the NAVSEA Motor Vehicle Driver's and Shipping Inspector's Handbook for Ammunition, Explosives and Related Hazardous materials, SW020-AF-ABK-010, Basic and the rules and regulations prescribed by the Federal Motor Carrier Safety Regulations, U.S. Department of Transportation, Federal Highway Administration, Bureau of Motor Carrier Safety.

2.15.10 **Slow-Moving Vehicles.** The slow-moving vehicle emblem shall be displayed on vehicles and equipment that do not exceed a speed of 25 miles per hour on the highway. The design and placement of the emblem shall be in accordance with Section 1910.145 subpart J (10) of Department of Labor Occupational Safety and Health Act (OSHA). The emblem consists of a fluorescent yellow-orange triangle with a dark red reflective border conforming to ASTM D 4956 Type III, Class 1.

2.15.11 **Flag Officer and VIP Identification.** Flag Officers, Staff Officers of flag rank, and VIPs are authorized to display their flag rank on sedans by means of a special plate (see Appendix J, Figure J-5). Flag rank displays shall not be painted on surfaces of the vehicle nor shall staffs be affixed. All other identification, painting, and marking instructions herein prescribed for Government-owned vehicles are to be strictly adhered to as required by law and regulations.

2.15.12 **Law Enforcement/Security Vehicle Markings.** Markings shall be as follows, unless a prior exemption has been approved by Naval Security and Investigative Command, in accordance with OPNAVINST 5530.14. The vehicles shall be painted the standard manufacturer's color. The word "Police" in 4-inch reflectorized blue letters of material conforming to ASTM D4956, Type III, Class 1 (encapsulated lens), shall be centered on the vertical portion of trunk lid facing to the rear. The word "Police" in 4-inch reflectorized blue letters shall also be applied to the side of both front fenders at the top. A command security department logo, either magnetic or decal, may be applied to the center area of the front doors of the vehicle. Requests to exempt base security/law enforcement vehicles from law enforcement/security markings and/or standard Navy markings and identification shall be forwarded to the major claimant with a copy to the responsible TEMC.

2.15.13 **Ambulance Emblems and Markings.**

a. An ambulance is defined as a vehicle that provides emergency medical care. Those manufactured after 1977 shall be certified by the ambulance manufacturer as a "**STAR OF LIFE**" ambulance. The "star of life" certification shall be provided on a placard or label, permanently affixed and easily visible in the ambulance oxygen compartment. Complete requirements for the Star-of-Life Ambulance is contained in the DoT 803 721 and Federal Specification KKK-A-1822 (current edition) regarding color and specific markings.

b. NCF field type ambulances. These units shall be marked as follows:

(1) On the front, where space permits, the word "AMBULANCE" shall be displayed in letters 3-inches high, centered above the windshield. A 3-inch high red cross on a 4-inch square white field shall be located both to the left and right, in line with the word "AMBULANCE" above the windshield.

(2) On the rear, a 6-inch high red cross on an 8-inch square white field shall be centered on each door panel, approximately 8 to 10 inches below the window, depending on vehicle configuration.

(3) On each side and on the top, a red cross on a white background shall be painted. Size of the cross and background shall depend upon the vehicles' configuration.

2.15.14 **Exemptions from Identification Markings.** The exemption referred to in the DoD 4500.36-R is modified to apply only to exterior markings and identification for Navy vehicles. Navy vehicles that are exempted from exterior markings shall be identified by painting the USN registration number on both the underside of the trunk lid and on the inner side of the glove compartment lid. In lieu of painting, the registration number may be stamped on a corrosion-resistant metal plate to be affixed to either of these two prescribed locations. Theater unified commanders are designated to authorize exemptions for motor vehicles located within their area of responsibility, when conspicuous identification shall endanger the security of individuals or U.S. Government interests. For CONUS commands, requests for marking exemptions, other than law enforcement/security vehicles, shall be submitted to the CNO (N46) via command channels, and the appropriate TEMC.

2.15.15 **Records of Exempted Vehicles.** Each TEMC shall maintain current inventory records of all administrative use motor vehicles that are authorized exemptions from the identification and marking provisions of the DoD 4500.36-R.

2.15.16 **Removal of Markings.** Upon permanent transfer to a disposal agency, or upon sale to commercial contractors, all Navy markings shall be obliterated or removed from the equipment prior to removal from an activity's inventory.

2.15.17 **Special Markings.** All special markings (e.g., work center/shop/division numbers, environmental message, etc.), not previously prescribed herein or consistent with marking policies prescribed in DoD 4500.36-R, should be limited to placement at the location where the vehicle license plate(s) normally would be located. (When license plates are being used, an additional plate with the special marking, can be suspended from the front plate only - not the rear.)

a. All boxcars used to transport ammunition or explosives shall be painted with white epoxy paint for better heat reflection. Two coats of gloss high reflective white acrylic urethane enamel, Federal Color No. 27886 or equivalent, shall be applied over a suitable primer.

b. All primary structural and aircraft firefighting vehicles (including wheels) shall be painted white over red with a solid, 10-inch white reflective stripe. Sikkens FLNA 3042 (Autocryl)---to---Dupont 97902U (Emron)---to---Pierces standard # 90 (candy apple red) apply.

c. ISO Containers. ISO Containers shall display identification numbering system required by OPNAVINST 4620.10, *Joint Procedures for Implementing the International Safe Container Act*.

d. Seabee Insignia. To readily identify NCF equipment, a yellow Seabee insignia shall be painted on all assigned equipment. **NOTE:** *If yellow does not contrast, the Seabee shall be painted black.*

Recommended stenciling locations for the Seabee emblems are listed in Appendix J. These recommendations shall be closely adhered to. If the recommended location has less than 8-inch width or height, the stencil shall be centered, with the Seabee itself shown upon the equipment, without concern for the trim. If space does not permit this, a 4-inch stencil may be used. If there is doubt about the proper stenciling location, contact NFELC Port Hueneme. Stencils may be requisitioned from NNFELC Port Hueneme or NNFELC Gulfport, using the data below, and a funded requisitioning document.

<u>NSN</u>	<u>Description</u>	<u>U/I</u>
7520-00-067-8434	Stencil, Insignia Seabee	8" ea
7520-01-160-9554	Stencil, Insignia Seabee	4" ea

e. Octopus Insignia. To readily identify CESE assigned to the U.S. Navy Cargo Handling and Port Group, a yellow Octopus insignia shall be painted on all assigned equipment. The recommended stenciling locations shown in Appendix J shall be closely adhered to.

f. Lifting Device Markings. Lifting devices shall be painted yellow and identified by the words "LIFT HERE" stenciled in 1-inch black letters on a visible area next to the lifting device.

g. Tire Pressure Markings. The recommended tire pressure shall be stenciled in 1-inch black figures on a visible area above each tire on all vehicles (except sedans) with pneumatic tires. A correct example for a vehicle with tires that require 25-pound pressure is "TP-25."

h. Tie Down Markings. It is recommended that tie downs and the capacity of each tie down ring be permanently attached to the equipment.

I. SIXCON Fuel Tanks. Fuel tanks shall be marked on each side with the word "FLAMMABLE" in 6-inch black letters directly above the words "NO SMOKING WITHIN 50 FEET" in 3-inch black letters. A removable 8- by 36-inch black sign with 6-inch yellow letters designating the type of liquid being transported shall be mounted in a bracket bolted on each side of the tank frame or tank carrier. This sign shall be marked "MOGAS" on one side and "DIESEL" on the other.

j. Optional Markings. The following information concerns other markings that may be applied to CESE when authorized by appropriate authority.

(1) Unit Identification Markings. Unit identification markings may be applied on equipment when approved by the responsible Force Commander. Currently approved marking size and shapes are shown in Appendix J, Figure J-6. The markings shall be placed in the following general locations so that they are clearly visible for at least 50 feet (see Appendix J).

(a) Automotive self-propelled equipment: left front and right rear.

(b) Automotive towed equipment: one on rear and one on left side near the front.

(c) Other Equipment: on each side near the USN numbers

(2) Operator's Nameplates. Operator's nameplates may be displayed on automotive vehicles, and centered on the grille, when approved by the responsible Unit Commander. The 3-1/2 by 18-inch nameplates shall be constructed of wood and painted green. Two-inch yellow lettering shall be centered on the sign.

(3) Vehicle Classification Markings. Department of the Army Field Manual FM5-36, *Route Reconnaissance and Classification*, outlines vehicle classification markings that shall be displayed when required by a responsible Theater Commander.

(a) Front Sign. All vehicles except trailers may use a yellow, 9-inch diameter front sign with black lettering mounted or painted on the right front of the vehicle facing forward, on or above the bumper, but below the driver's line of vision.

(b) Side Sign. Trailers shall use a yellow, 6-inch diameter side sign with black lettering and shall be mounted or painted on the right side of the trailer facing forward.

k. Removal of Markings. When CESE is transferred to a naval activity or unit not authorized certain markings, those markings shall be removed or changed to authorized markings for the new custodian.

2.16 **Activity/Unit Transportation Organization.** The administration of transportation equipment matters at an activity should be the responsibility of a specifically designated component of the activity. This component is usually described as the "Transportation Division" and is normally a part of the Public Works Department (PWD). Transportation functions at smaller activities are often administered by a transportation branch or section.

2.16.1 **Responsibilities.** The Transportation Division (or branch/section) is responsible for providing responsive, cost effective transportation services to the activity and providing safe and reliable equipment. The Transportation Director (or Superintendent) is responsible for planning, organizing, and developing equipment, manpower, and funding requirements; and directs, supervises, controls and coordinates the activities of these branches. The Director's responsibility for achieving the objectives of the Division by providing responsive transportation services to the activity must include taking measures needed to reduce all costs, in order to be competitive with commercial operations. These services normally include:

- a. Operating vehicle and equipment pools.
- b. Operating scheduled and unscheduled passenger and freight transportation systems.
- c. Maintaining automotive, construction, railroad, fire fighting, and weight handling or materials handling equipment.

2.16.2 **Organizational Components.** A Transportation Division normally consists of two branches; an Operations Branch and an Equipment Maintenance Branch. Both are supervised by a Transportation Division Director or Transportation Superintendent. The major functions of the branches are:

- a. **Operations Branch**
  - (1) Operates the activity bus and taxi system for the movement of personnel.
  - (2) Operates the trucking system for the movement of material and equipment.
  - (3) Operates the solid waste collection system.
  - (4) Provides equipment with operators for facilities maintenance functions, including riggers and equipment for heavy lifts and movements. Riggers may be assigned to another Department within the Command.
  - (5) Assigns vehicles on a long-term basis to using departments (Class B assignments, as described in paragraph 2.1.2).

(6) Operates station motor pool and assigns vehicles on daily or trip basis (Class C assignments), and responds to all intermittent random requests.

b. Equipment Maintenance Branch. Accomplishes scheduled and unscheduled maintenance with minimum labor and material (parts) necessary to ensure a safe and serviceable fleet capable of meeting the activity's operational requirements.

c. Subordinate Components. Depending on the size of the activity, subordinate organizations designated as functional sections may be established to carry out the functions within the two main branches of a Transportation Division. A foreman or general foreman normally heads such sections. Possible sections are as follows:

(1) Under the Operations Branch: Station Bus Section, Taxi Section, Heavy Equipment Section, Crane and Rigger Section, and Operator Licensing and Examining Section.

(2) Under the Maintenance Branch: Automotive Repair Section, Heavy Equipment Repair Section, and Materials Handling Equipment Repair Section.

2.16.3 **The NCF/SOU Equipment Organization (Titles and Duties).** The terms and titles in this manual when referring to NCFs/SOUs are normally those used in a Naval Mobile Construction Battalion (NMCB) as outlined in NAVFAC P-315, *Naval Construction Force Manual*. The person filling the following jobs in your organization may have a completely different title, but the function should be basically the same.

a. Equipment Officer. The Equipment Officer is appointed by the Commanding Officer and is personally responsible for the proper use and maintenance of all CESE assigned to the unit and ensures that all equipment is under a dispatching authority and is properly controlled. Through the use of an operations section, the Equipment Officer evaluates available vehicle resources against the mission requirements of the unit and assigns all equipment accordingly. It is the Equipment Officer's responsibility to disseminate instructions to all equipment users and to ensure proper application. The Equipment Officer investigates all reports of abuse and improper use of equipment, conducts traffic court and motor vehicle accident investigations, and can designate someone to conduct traffic court and vehicle accident investigations.

b. Operations Supervisor. The Operations Supervisor supervises all personnel who operate equipment and enforces the policies of the Equipment Officer. The Operations Supervisor works with project officers and equipment users to coordinate equipment requirements; review project plans, specifications, and estimates; and through the operations section, maintains administrative and operational control over all assigned equipment.

c. Dispatcher. The key position in the management of the equipment of the unit is the Dispatcher, who controls the day-to-day assignment and CESE usage. The Dispatcher's primary duties are to receive and evaluate requests for vehicles and then dispatch suitable equipment from authorized resources. It is the dispatcher's responsibility to check the operator's Vehicle Operator's Identification Card (OF-346) and license, when applicable, prior to issuing a trip ticket, provide for the most economical use of manpower and equipment, and ensure equipment safety, security, and proper use.

(1) Dispatcher Qualifications. Personnel selected as dispatchers shall have the ability to convey information and instructions in a concise, tactful, and understandable manner; exercise good judgment; to make decisions quickly and to work efficiently under pressure; perform administrative, clerical, and record-keeping skills that concern transportation; and have knowledge of equipment configurations, uses, and limitations.

(2) Dispatcher Responsibilities. The Dispatcher's primary duty is to manage the equipment resources of the unit efficiently. The Dispatcher must accomplish this within the general policies and directives of the Navy and in accordance with local policies, as directed by the Equipment Officer. The paperwork flow required when dispatching CESE is outlined and explained in Chapter 3. The Dispatcher also provides the following:

(a) Route Information. The Dispatcher must brief operators on the weather, road conditions, routes to be followed, and emergency procedures; know the general details of the most frequently traveled routes, weight limits on roads and bridges, low-clearance viaducts, and traffic hazards; and must be able to direct inexperienced operators on the routes to be followed and the location of principal points. The Dispatcher should have a good knowledge of local transportation systems, their schedules, and routes, and familiarity with local laws and regulations that govern the use of equipment. Most states have requirements about lights, signals, and weight limits per tire, and require special permits for moving heavy equipment on public highways.

(b) Equipment Status. The Dispatcher must know the current status and location of every assigned item of equipment. In order to evaluate and schedule requests for equipment and services, a computerized system shall be maintained and shall be capable of printing reports on all equipment assigned to the Unit, the vehicles' current status, general assignment, and location. When this is not possible, then a manual equipment status board shall be used. Further information about equipment status boards is contained in Chapter 3.

(c) Keys. The Dispatcher controls the keys to all vehicle-locking devices and secures all primary circuit ignition keys, padlock keys, and any duplicates while not in use. All self-propelled automotive equipment that has non-locking ignition

switches shall install a method of padlocking the steering wheel or gearshift lever. Dispatch offices without a 24-hour duty watch must use locked key cases or cabinets.

(d) Records. The Dispatcher must maintain all required forms and records. The paperwork flow is outlined in Chapter 3. The Dispatcher must ensure that CESE required to operate over the road contains accident reporting procedures, Standard Form 91, *Motor Vehicle Accident Report*, and a description of local accident reporting procedures. Chapter 3 further explains accident reporting. The Dispatcher also the responsibility for collecting feeder data such as inventory, allowance status, equipment availability/nonavailability, and usage/cost information.

(e) Equipment Scheduling. The Dispatcher shall rotate vehicles between jobs, where practical, to equalize equipment usage. Unused equipment is cycled and exercised to minimize deterioration. All equipment must be made available for preventive maintenance service as scheduled by the Maintenance Branch.

d. Equipment Yard Supervisor. The Equipment Yard Supervisor, "Yard Boss," has one of the operations section's most important jobs. The Yard Boss manages the equipment yard and the vehicles parked in it, and establish and enforce traffic control through the yard, such as stop signs, speed limits, and one-way traffic flow. The Yard Boss is in charge of yard maintenance and establishes parking lines and areas such as ready line and awaiting-entry-into-shop line; and ensures that all operator maintenance procedures are performed correctly to reduce vehicle misuse. The Yard Boss normally determines operator liability because the Yard Boss is familiar with the equipment and should know what dents and damage is new. Working with the Dispatcher, the Yard Boss cycles and exercises equipment not otherwise used. The Yard Boss is normally in charge of the vehicle refueling station, the equipment wash rack, and may also be assigned as custodian for collateral equipage or equipment attachments. The Yard Boss makes certain that the operator performs a pre-start check of CESE prior to leaving the yard.

e. License Examiner. The Commanding Officer or Officer in Charge must designate license Examiners in writing. The License Examiner plans and administers a Unit's licensing program and supervises the unit's operator training program. Before the examiner issues or validates a license, each applicant's qualifications are determined. Locally prepared knowledge examinations, clinical tests, and performance qualification tests are conducted. The License Examiner must be experienced in aspects of the operation, servicing, and safety requirements of equipment the examiner is designated to license. The examiner maintains license files and records for each assigned person with a U.S. Government operator's license. The appointed License Examiner shall become familiar with, and maintain a library of, the following publications or the pertinent sections thereof: NAVFAC P-307, *Management of Weight Handling Equipment*; NAVSUP P-284, *Materials Handling Equipment, Vols. I and II*; NAVFAC MO-403, *Navy Drivers Handbook*; NAVSEA Motor Vehicle Driver's and Shipping Inspector's Handbook for Ammunition, Explosives and Related Hazardous materials,



SW020-AF-ABK-010, Basic; U.S. Department of Transportation, Federal Highway Administration, *Motor Carrier Safety Regulations; International Road Signs*; and COMTHIRDNCB/COMSECONDCNB Instruction 5100.1, *Naval Construction Force Safety Manual* (NCF only). Chapter 3 further explains license forms and procedures.

f. Operator. Every person who drives or operates any item of equipment is called an operator. All military operators who use government-owned or rented equipment must be examined and licensed in accordance with this chapter. Licenses do not authorize an operator to use CESE; each item of equipment must be properly dispatched. Under no circumstances shall a vehicle be dispatched to a person who does not possess a valid license/OF-346 that covers the size and type of vehicle requested. Operators are responsible for the use of CESE for authorized official business only, and must comply with all traffic laws, ordinances, and regulations.

(1) Operator Qualifications. Operator qualifications are set forth in NAVFAC MO-403, SW020-AF-ABK-010; NAVSEA SW020-AG-SAF-010, Navy Transportation Safety Handbook; U.S. Department of Transportation, Federal Highway Administration, *Motor Carrier Safety Regulations*; Code of Federal Regulations, Title 49-Transportation Parts 100-199; and state and local laws and regulations. The proper selection of personnel to be licensed is of utmost importance; therefore, before a person in the Armed Forces can obtain a license, the following requirements must be met. A Commanding Officer may impose additional qualifications, requirements, examinations, or certifications deemed necessary.

(a) Age. Military operators must be at least 18 years of age. Ambulance drivers must be 21 years of age.

(b) Physical Fitness. A physical examination is required except for military personnel applying for a license to operate general-purpose vehicles up to 10,000 pounds gross vehicle weight (GVW) who possess a valid state operator's license for the vehicle types involved. Operators must have no physical defects or emotional instability that interfere with efficient operation of equipment. Persons with disabling deformities or conditions that interfere with satisfactory performance of duties may be disqualified by the examiner. Operators must have minimum vision of 20/40 Snellen in one eye, and 20/70 Snellen in the other eye, with or without glasses. Applicants must be able to distinguish red, green, and yellow colors regardless of position of colors. Hearing, with or without hearing aid, must test 15/20 for ordinary conversation in one ear. Operators must be able to speak English reasonably well, be able to prepare accident reports, and understand the meaning of standard traffic signs.

(c) Examinations. Examination and tests for military personnel that apply for an OF-346 to operate general-purpose vehicles up to 10,000 pounds GVW shall be waived if the applicant possesses a valid state operator's license for the type vehicles involved. Applicants applying for an OF-346 to operate trucks over 10,000 pounds GVW, buses over 10 passengers, emergency and special-purpose vehicles, construction/weight handling/materials handling equipment, and for

transporting explosive/hazardous material, must successfully pass both a written knowledge examination and a performance qualification test as outlined in paragraph 3.10.

(2) Operator Maintenance. Operator's must keep the vehicle clean, safe, in serviceable condition, and perform operator maintenance. Equipment must be inspected systematically to discover defects before a serious failure or an accident occurs. Operator Maintenance includes the following inspections and services:

(a) Prestart Inspection. A prestart inspection consists of performing the services listed on the *Operator's Inspection Guide and Trouble Report*, NAVFAC 9-11240/13, also called a "Hard Card, and other services, as directed. This inspection basically covers inspection of fuel, oil, water, and battery levels; inspection of tires, safety devices, drive belts, cargo and mounted equipment; inspection for leaks and exterior or interior damage; and lubricating, as required. Do not operate defective or unsafe equipment. Note the discrepancies on the Hard Card/Daily PM Report and forward immediately to the Dispatcher.

(b) Operating Checks. The Operator **MUST** use the senses to detect items that need attention: *smell* (burning rubber, grease, clutches); *hearing* (unusual noises); sight (instruments); and *feeling* (drag, pull, vibration). Tires should be periodically inspected for flats and rocks between duals. During operation, lubrication is the responsibility of the operator. If a defect is suspected stop the equipment, investigate, ensure that defects that damage equipment or impair safe operation are repaired before using equipment.

(c) After Operation Services. After operation, the operator performs established shutdown procedures as prescribed in the appropriate operator's manual and other services, as directed. The operator then checks equipment cleanliness (wash and steam clean as appropriate), drains air tanks, covers exhaust stacks, closes doors, windows, and hoods, sets brakes, blocks dump beds to drain, and tops off fuel tanks if tanks are less than one-half full. Supervisors shall ensure that the equipment is protected against the weather and the Hard Card/Daily PM Report is completed and returned to the Dispatcher.

(d) Service Station Services. During vehicle refueling, the operator shall perform the following checks as a minimum: oil level, leaks under the vehicle, coolant level, wheel lug bolts and nuts (tighten as needed), and tires for proper inflation and condition. If additional services are required, the vehicle operator shall turn the vehicle in to the maintenance shop.

2.17 **Transportation Management Information Systems.** The Navy's Automated Transportation Management Information Systems can provide many times the data available from manual systems and in more formats than are normally available from central data processing systems. The ability to review data, make direct entries which bypass time consuming manual systems, retrieve data/summaries for review in print,

and produce standard or special reports, enhances productivity. It also provides the database necessary to allow management to review performance on an exception or specific basis without the excessive effort needed to perform a manual analysis, or search through numerous satisfactory performance items to find the few problem areas. This means effective use of management time and timely identification of minor problem areas before they become major. There are a number of reliable, off-the-shelf Transportation Management Information Systems that have the necessary tools to effectively and efficiently track all aspects of an activity's operations and maintenance program.

a. MicroSNAP Maintenance and Operations Support System (MOSS). MicroSNAP MOSS is the replacement for the Seabee Automated Mobile Management Equipment Operations and Equipment Maintenance Systems. Implementation of MicroSNAP MOSS to the NCF sites shall take place during FY00. Micro SNAP MOSS is a state-of-the-art system designed to manage vehicle inventory, maintenance, and operations. The subsystem allows for the scheduling of preventive maintenance (PM) as well as recording corrective maintenance.

MicroSNAP MOSS can be configured to operate as a single subsystem, or it can be set up as two separate subsystems, one for Maintenance and the other for Dispatch Operations. Additionally, it operates on a standalone PC or on a Local Area Network (LAN). MicroSNAP MOSS also provides a direct interface with the MicroSNAP Supply and Financial Management (SFM) subsystem, if operating on the same hardware. Specific instructions for entering/updating data, generating various maintenance and dispatch reports, and for using all other functions are provided in the F1 Help (screen and field help) menu option of the system. User manuals are not being developed at this time for Micro SNAP MOSS. In the future, a website shall be developed to show frequently asked questions, "How do I" procedures, and future update information.

b. There are specific options within MicroSNAP MOSS:

(1) Configuration Data: Allows review of the Equipment Configuration, Maintenance Actions, Collateral Equipment, Attachment Information, and Order Parts. Allows authorized users to add, modify, or delete vehicle configuration records and associated attachments, collateral equipment, and maintenance actions.

(2) Off-site Data Exchange: Provides for the transfer of specific equipment configuration data and collateral equipment data between Maintenance and Dispatch Operations when MicroSNAP MOSS is configured as two separate subsystems. It also provides for downloading closed maintenance actions.

(3) Reports: Provides options for generating online or printed forms and reports dealing with vehicle configuration, maintenance, and dispatch.

(4) Tech-Edit: Provides access to a variety of functions for processing Supply Requisitions/Purchase Orders when the MicroSNAP SFM subsystem is not installed.

(5) Subsystem Manager: Allows for establishing/maintaining of Sites' Unique data, including PM settings for Active and Live Storage equipment. Allows for establishing and maintaining valid users and the access rights to various functions.

(6) Dispatch Operations: Provides for the daily dispatch and return operations of vehicles.

(7) Manage Direct Turnover (DTO) Parts: Allows for ordering and issuing of DTO parts. Provides sequential records and proof of order of all parts requests.

(8) Maintenance Supervisor Review: Allows the Maintenance Supervisor to review and approve/disapprove the Configuration and Live Storage changes initiated by the Cost Control Supervisor.

(9) Interfaces with MicroSNAP SFM: Order requests are sent directly to MicroSNAP SFM for approval and processing. Stock checks can be performed for MicroSNAP MOSS. Provides direct access to MicroSNAP SFM for ordering of non-maintenance related supplies.

2.18 **Most Efficient Organization (MEO).** MEO, in its generic sense, simply means that a function, in this case Transportation Operations and Maintenance (O&M), is operating at optimum efficiency and in the most effective manner possible. The term evolved from the Commercial Activities (CA) program reviews mandated by Office of Management and Budget (OMB) Circular A-76, and in the past several years it has assumed increasing importance to CESE managers. For the most part, the Navy's success in Transportation O&M CA reviews can be credited to the survey teams and activity personnel who have identified various methods for improving efficiency and reducing costs through an established MEO. Activity CESE managers should look closely at their respective Transportation O&M functions (whether involved in CA or not) with a view toward achieving the MEO. To assist in this endeavor, some of the more significant improvement/cost reductions that should be considered are provided:

a. **Maintenance Function**

(1) Revise work generation practices.

- (a) Implement a service writer concept.
- (b) Establish a quick line repair.
- (c) Schedule body repairs separately.
- (d) Involve customer in vehicle appearance responsibility.

- (2) Implement incentive pay for mechanics.
- (3) Increase use of Blanket Purchase Agreements (BPAs).
- (4) Require vendors to deliver material direct to shop store.
- (5) Establish pre-expended parts bin.
- (6) Improve parts cross-referencing.
- (7) Improve communications between Transportation and Supply.
- (8) Buy new or rebuilt components rather than rebuild.
- (9) Use indefinite quantity parts contracts.
- (10) Evaluate economic feasibility of retaining outlying shops.
- (11) Maximize use of support contracts (body repair, component repair, outlying area maintenance, vehicle washing, and lubrication services).
- (12) Adjust pay grades of mechanics to commensurate with job skill level requirements.
- (13) Determine requirements for diagnostic/productivity enhancing tools and equipment.
- (14) Cost all labor in accordance with the DoD FMR Cost Account Codes (CACs).
- (15) Maximize use of retread tires (refer to para 4-1.1-.7).
- (16) Expand use of labor saving tools/equipment.
- (17) Increase technical training.

b. Operations Function

- (1) Sub-contract construction equipment requirements that are not of a continuing nature, i.e., crane work, ditching, pole setting, etc.
- (2) Centralize delivery and construction operator function (absorb operators and equipment back under transportation control).
- (3) Implement revised dispatching procedures.

- (a) Use computerized dispatch/assignment system.
- (b) Install radio equipment to optimize the equipment operator's productivity.
- (4) Adjust pay grades of dispatchers or make it a collateral duty of the operations foreman or operator on standby.
- (5) Inspect C pool equipment before issuing, document condition to ensure that operators damaging or abusing equipment can be identified.
- (6) Maximize the use of support contracts (peak vehicle rental, fixed runs, trash and garbage).
- (7) Adjust pay grades of operators to skill levels required.
- (8) Use part time labor for fixed runs, for example, seasonal schedules.
- (9) Ensure operators perform service checks (oil, water, tires, etc.) and applicable service facilities are conveniently located, operational, and utilized.
- (10) Cost all labor in accordance with FMB manual CACs.

c. Other Possibilities

- (1) Rotate assignments, i.e., assign lowest cost/low mileage equipment to highest mileage users.
- (2) Evaluate vehicle size/type required versus vehicle size/type assigned.
- (3) Revise working hours (night for trash & garbage, etc.).
- (4) Establish incentives for drivers.
- (5) Install an Automated Fuel Dispensing System.
- (6) Fuel/service at night.

**Note:** TEMC can provide additional direction on the elements and implementation of an MEO.

2.18.1 **Commercial Activities (CA) Program.** In recent years, a variety of factors have served to decrease the availability and use of Government forces in the performance of maintenance, operations, and other base support services at Naval activities. The policy and procedures for the operation of the Navy CA are contained in OPNAVINST 4860.7 and are implemented by related NAVSUPSYSCOM and COMNAVFACENGCOM letters. The OMB Circular A-76 contains policies for acquiring CA products and services needed by the Government and provides a comprehensive

Cost Comparison Handbook as a supplement. Program inquiries connected with transportation equipment support shall be directed to the appropriate TEMC.

a. Contracts with commercial contractors for transportation related services should always stipulate the status of all equipment provided to the contractor (see paragraph 3.15). Generally stated, any equipment provided to the contractor, but operated by Government personnel shall remain Government owned, be replaced by the Government, and subject to approved IOs. Generally stated, any equipment provided to the contractor and operated by contractor personnel shall be replaced by the contractor and shall not be subject to approved IOs.

b. A copy of the transportation portion of the CA study should be forwarded to the responsible TEMC for their review and input.

## CHAPTER 3. OPERATIONS

This chapter contains guidelines for the administration of transportation equipment matters concerning the functions of a Transportation Organization set forth in paragraph 2.15.

3.1 **Trip Tickets.** The Motor Equipment Utilization Record (DD Form 1970) (Figure 3-1) or an activity generated Trip Ticket, shall be employed as the basic document for information concerning the utilization of motor vehicles and shall be prepared in accordance with instructions on the back of the form. Navy activities using mechanized/computerized motor vehicle utilization data gathering systems shall establish operating procedures to implement this requirement. The use of the Trip Ticket for Class A and Class B assignments on station shall be optional as determined by the activity Commanding Officer. Trip Tickets are required for all NCF and SOU activities regardless of the class assignment. Trip Tickets are required daily for all off station and C pool vehicle dispatching. All Trip Ticket data shall be recorded on the Dispatcher's Log described below and retained for at least 90 days after issue.

MOTOR EQUIPMENT UTILIZATION RECORD							
DATE (YYMMDD)		TYPE OF EQUIPMENT		REGISTRATION NO./SERIAL NO.		ADMINISTRATION NO.	
ORGANIZATION NAME		ACTION	TIME	MILES	HOURS	FUEL	OIL
1ST OPERATOR (Last Name, First, M.I.)		IN				REPORT TO (Last Name, First, M.I.)	
OPERATOR'S SIGNATURE		OUT				DISPATCHER'S SIGNATURE	
		TOTAL					
2D OPERATOR (Last Name, First, M.I.)		IN				REPORT TO (Last Name, First, M.I.)	
OPERATOR'S SIGNATURE		OUT				DISPATCHER'S SIGNATURE	
		TOTAL					
3D OPERATOR (Last Name, First, M.I.)		IN				REPORT TO (Last Name, First, M.I.)	
OPERATOR'S SIGNATURE		OUT				DISPATCHER'S SIGNATURE	
		TOTAL					
4TH OPERATOR (Last Name, First, M.I.)		IN				REPORT TO (Last Name, First, M.I.)	
OPERATOR'S SIGNATURE		OUT				DISPATCHER'S SIGNATURE	
		TOTAL					
DESTINATION		TIME		RELEASED BY		REMARKS	
		ARRIVE	DEPART	(Signature)			
FROM							
1.							
TO							
2.							
TO							

Partial View of Motor Vehicle Utilization Report, DD Form 1970  
Figure 3-1.



[illegible]

3-2

### 3.3 **Bus Service**

3.3.1 **Bus Service, General.** It is Navy policy to provide sufficient bus service to effectively support activity missions. This support may be provided to military personnel, DoD civilians, contractor employees, and military dependents. This service may be provided with government-owned, leased, or chartered equipment, or with contract service. Expenses for the operation of such services shall be paid from appropriated funds. In all cases, bus systems are funded from station O&M,N funds, whether or not fares are collected. For reimbursement, which may be available for certain, school bus operations, see Chapter 6 of the DoD 4500.36-R. While not all inclusive, Figure 3-3 provides a quick reference to the types of bus service available. Government-furnished transportation services shall be categorized as group home-to-work transportation service, base mass transit, and shuttle bus service.

<b><u>CATEGORIES OF BUS TRANSPORTATION</u></b>			
<b><u>Bus Service</u></b>	<b><u>Authorizing Directive</u></b>	<b><u>Approving Authority</u></b>	<b><u>Method of Funding</u></b>
Shuttle Bus	DoD 4500.36-R NAVFAC P-300	Local CO	Appropriated funds
Group home to work	DoD 4500.36-R NAVFAC P-300	CNO	Appropriated funds
<b>Note: Fares collected must be deposited to U.S. Treasury as misc. receipts.</b>			
Base Mass Transit	DoD 4500.36-R NAVFAC P-300	CNO	Appropriated funds
<b>Note: Fares collected must be deposited to U.S. Treasury as misc. receipts.</b>			
Emergency	DoD 4500.36-R NAVFAC P-300	CNO	Appropriated funds
<b>Note: Fares collected must be deposited to U.S. treasury as misc. receipts.</b>			
Liberty	NAVFAC P-300	Local CO	Appropriated funds
School	DoD 4500.36-R	Local CO	Appropriated funds
Morale, welfare, recreation, command Religious program (Chaplains Program)	DoD 4500.36-R	Local CO	MWR Appropriated funds

Figure 3-3. Categories of Bus Transportation

a. Application of the various types of available transportation services:

(1) Group Home-To-Work Transportation Service. Transportation services to and from places of employment, provided on a fare basis. The fact that commercial transportation facilities are inadequate and cannot be made adequate is the primary factor in approving group home-to-work transportation requests.

(2) Base Mass Transit Service. Non-duty transportation services among places on a military installation or between sub installations, provided on a fare basis. Base mass transit service is designed to fulfill requirements beyond the scope of shuttle bus service.

(3) Shuttle Bus Service. Scheduled activity bus service provided fare-free within or between installations for transporting military and DoD personnel between offices and work areas; enlisted personnel between troop billets and work areas; DoD contractor personnel on official defense business; and employees of non-DoD federal agencies on official business. Available space on shuttle buses may be used by other categories of personnel; however, such conveyances may not be used to provide domicile-to-duty transportation.

b. When more than one of these services is deemed appropriate for an installation, their use should be integrated in the overall installation transportation plan and with any commercial service being provided. There should be a clear distinction concerning the purposes of the various types of service.

**3.3.2 Mass Transportation Services (Group Home-To-Work Transportation and Base Mass Transit).** Title 10, Section 2632, of the United States Code (10 U.S.C. 2632) gives the Secretary of the Military Department concerned authorization to provide transportation by motor vehicle or water carrier with seating capacity of 12 or more passengers in order to effectively conduct the affairs of their departments. However, privately owned vehicles, car pools, vanpools, and scheduled buses shall continue to be the primary sources of home-to-work transportation. (Individual home-to-work transportation assignments are discussed in Chapter 1, paragraph 1.13.)

a. Authorization for Group Home-To-Work Services. Requests for group home-to-work services should be sent to CNO N46 via the activity chain of command, the responsible TEMC and COMNAVFACENGCOM (Code PWT). Whenever CNO determines that the effective conduct of the affairs of the Navy requires assured and adequate transportation service, this service can be provided by motor vehicle or water carrier to and from places of employment for individuals attached to, or employed in, that department. In authorizing the establishment of such systems, CNO must determine that:

- (1) Other facilities are inadequate and cannot be made adequate;
- (2) A reasonable effort has been made to induce operators of private facilities to provide the necessary transportation, and such effort has been unsuccessful; and,
- (3) The service to be furnished shall make proper use of transportation facilities and shall supply the most efficient transportation to the persons concerned.

b. Authorization for Base Mass Transit Services. CNO may authorize base mass transit services on any military installation, or in some cases between sub-installations, which are within the established permissible operating distance, if the service is determined to be efficient, practical, and in the best interest of the Navy. In authorizing the establishment of such systems, CNO must determine that:

- (1) A potential for saving energy and for reducing air pollution exists;
- (2) Efforts to induce operators of private facilities to provide the necessary mass transportation has been unsuccessful; and
- (3) The service to be provided shall make proper use of transportation facilities and shall supply the most efficient transportation to the persons concerned.

The base mass transit authorization may be used to provide home-to-work transportation on military installations or between sub-installations in reasonable proximity. It may also be used to provide on-base transportation service to domiciles, shopping areas, and installation recreational areas on a routine basis, if the traffic volume warrants, or as a special service to support a specific event.

c. Reimbursement

(1) Unless specifically waived under subparagraph (3) below, a fare system shall be structured to recover all costs of providing the mass transportation service, including capital investment, salaries, operations and maintenance. If the vehicle is used for operational (mission) and mass transportation, only the costs directly related to mass transportation must be recovered, i.e., acquisition costs shall not be recovered through the fare system.

(2) In overseas areas only, a "reasonable" fare may be authorized. This fare shall, as a minimum, recover the cost of operation.

(3) Public Law 100-180 amended 10 U.S.C. 2632 to authorize waiving the fare for transportation of DoD (military and civilian) personnel to and from a military installation (to include dependents), in the case of a military installation located in a remote area determined by CNO to be inadequately served by regularly scheduled commercial mass transit.

(4) All fare and proceeds received by DoD components from the operation of mass transportation services must be accounted for and deposited in the U.S. Treasury as miscellaneous receipts, pursuant to provisions of 10 U.S.C. 2632.

d. Vehicle Acquisition. When determinations have been made that group transportation and/or base mass transit service are required, the Navy, subject to budget limitations and funding availability, may:

- (1) Buy or hire motor vehicles or water carriers;
- (2) Maintain and operate the equipment by Government-owned or contractor facilities;
- (3) Lease or charter the equipment to private or public carriers for operation.

e. Requests for Mass Transportation Service (Group Home-To-Work Transportation or Base Mass Transit Service). Requests for authority to establish these transportation services shall be submitted through the responsible TEMC and the command chain to CNO, via the Commander, Naval Facilities Engineering Command (Code PWT), for determination. The following information shall be furnished:

- (1) Name, mission, and location of the activity.
- (2) Current military and civilian strength, and authorized changes that shall affect transportation requirements. Show breakdown of work-shifts if applicable.
- (3) A description of existing facilities, including the use of privately owned vehicles, carpools, and group riding arrangements.
- (4) Points to which service is required and the distance between the installation and each point.
- (5) The number of people requiring recurring transportation between the installation and each point (indicate by shift if applicable).
- (6) In the case of group home-to-work transportation service, a statement describing the efforts which have been made to make existing facilities, public or private, adequate, or efforts to induce private operators to provide the necessary transportation.
- (7) In the case of base mass transit service, an assessment of the potential for saving energy and reducing pollution.
- (8) The type of service proposed, plus information concerning all necessary arrangements such as rentals, charters, rates, routes, and schedules; and

type, source, number, and seating capacity of the equipment to be used. The amount of fare to be charged shall be stated and a map or sketch of the area enclosed. If the proposed service is to be operated with Government-owned vehicles, requests must indicate that the local commercial carriers have no desire or capacity to provide the service.

(9) A statement as to the estimated cost and availability of appropriated funds to operate the service.

(10) The date on which the service is needed or can be started.

f. Transit Facility Control Number. After CNO's approval of the group transportation or base mass transit service request, a Transit Facility Control Number shall be assigned by COMNAVFACENGCOM for reference, control, and reporting purposes. These bus systems shall be reviewed at least annually to determine continued validity and a statement indicating the continuing validity of the requirement for such transportation is to be attached to the report required by paragraph g. below.

g. Annual Report. A report indicating the actual expenditures chargeable to the home-to-work transportation and/or base mass transit service facility operations shall be prepared at the end of the fiscal year (30 September) using the format noted in figure 3-4 as a guide. NAVFAC Report Control Symbol 11240-16 applies to this report. This report shall be forwarded to COMNAVFACENGCOM with a copy to the appropriate TEMC by 30 November annually. A statement indicating the continued validity of the requirement for this transportation must be attached to the annual report. This shall constitute the annual review required by DoD 4500.36-R.

h. Types of Fares for Group Home-To-Work Transportation and Base Mass Transit. The vehicle operator normally shall collect fares. Fares may be collected in any or all of the following forms.

- (1) Books of tickets;
- (2) Single-trip tickets;
- (3) Round-trip tickets;
- (4) Commutation tickets;
- (5) Identification as authorized to travel free of charge;
- (6) Cash.

i. Selecting Types of Fares. In general, the use of cash fares should be discouraged. Serially numbered tickets for payment of fares should be employed to the maximum extent. Tickets may be single-trip, round-trip, in books, or commutation tickets. In considering the type of tickets to be used, it should be noted that refunds may be paid only to the original purchasers. Ticket books and commutation tickets should provide space for the original purchaser's name, signature, and badge number (if applicable) with the date of purchase shown.

### Group Transportation and Base Mass Transit Services Summary

From: Commanding Officer, Naval Station Anywhere  
To: Commander, Naval Facilities Engineering Command  
Via: Commanding Officer, Pacific Division, Naval Facilities Engineering Command

Subj: Annual Report for Transit Facility Control #02345 for FY 01 (Group Home-to-Work Transportation and/or Base Mass Transit Bus Services)

1. The following report is submitted covering transportation provided under Title 10, U.S. Code, Section 2632:

- (a) Location: Place, State and/or country  
Reporting Activity: Naval Station Anywhere  
Activity Population Military 3000 Civilian 550
- (b) Navy –owned vehicles: USN Number s, EC and seating capacities  
91-00000 0063 36
- (c) Leased vehicles: Vehicle types, seating capacity and annual cost to lease
- (d) Rate of fare: per trip \_\_\_\_ Round trip .75
- (f) 

Total receipts	\$6648
Maintenance expenditures	\$3700
Operations expenditures	\$2570
Total expenditures	<u>\$6270</u>
- (g) Total miles operated by facility during fiscal year 10,175
- (h) Appropriation chargeable.. 000000
- (i) Disbursing Officer: Name and Symbol Number: A.B. see 0000
- (j) Accounting Station: Naval Facilities 00000

2. The receipts and expenditures shown above represent all operations of the transportation facility under Title 10, U.S. Code, Section 2632.

3. A statement indicating the continuity validity of this transportation requirement is attached.

### Ground Transportation and Base Mass Transit Services Summary Figure 3-4.

j. Inventory Control of Tickets. An inventory control record of all types of tickets received from the printer (supported by a copy of the printer's invoice or delivery receipt) and of tickets issued to ticket agents for sale (supported by a signed custody receipt) should be maintained by the office responsible for the control of tickets. At least once a month, a physical count of tickets on hand should be made and reconciled with the balance reflected by the inventory control record. Tickets returned to the custodian should be reported in the control record as a receipt and should be supported in the records of the ticket agent by a custody receipt. Ticket agents should maintain an inventory control record of tickets, recording the tickets received from the Transportation Officer (by denomination) and the tickets sold each day. At least once each month the Transportation Officer should make a physical count of the tickets held by the agents, and the results of such counts should be reconciled with the agents' control records. The amount of sales recorded in the inventory control records should

agree with the collections turned over for deposit with the Disbursing Officer. If the collections are given to a collection agent responsible for obtaining cash from all ticket agents for deposit with the tickets held by the agents, the results of such counts should be reconciled with agents' control records. The amount of sales recorded in the inventory control records should agree with the collections turned over for deposit with the Disbursing Officer. If the collections are given to a collection agent responsible for obtaining cash from all ticket agents for deposit with the Disbursing Officer, the ticket agent should obtain a custody receipt for the cash turned over. The custody receipt may be changed to indicate receipt for cash instead of tickets. The depositing collection agent should maintain a record of ticket sales, showing this data, to substantiate the Cash Collection Voucher (DD Form 1131), FMB Manual. Receipts should be deposited with the Disbursing Officer daily or at any other reasonable interval.

k. Use of Coin Boxes. Where coin boxes are used, the activity Disbursing Officer should establish policy and procedures for accounting for cash deposits. Vehicles should be equipped with tamper-proof coin boxes that permit visual inspection of coins inserted. If lock type boxes are used, the Transportation Officer or an authorized representative other than the driver of the vehicle should retain the keys.

3.3.3 **Shuttle Bus Service (Scheduled Activity Bus Service).** The capability to transport groups of individuals on official business between offices on installations or between nearby installations is a recognized requirement and is essential to mission support. The effective use of buses reduces the requirement for individual assignment of administrative vehicles.

a. Shuttle bus services may be provided fare-free on or between installations for the transportation of:

(1) Military personnel and DoD employees between offices and work areas of the installation or activity during designated duty hours when justified by the rider ship. These routes should be designed to service offices and work areas only and should not include base housing areas, recreational or shopping areas unless these areas cannot reasonably be avoided in servicing the authorized points.

(2) Enlisted personnel between troop billets and work areas.

(3) DoD contractor personnel conducting official defense business.

(4) Employees of non-DoD federal agencies on official business. Such transportation shall only be provided over routes established for primary support of the defense mission.

b. The following instructions apply to establishing and maintaining shuttle bus routes:



(1) Established routes and schedules must be based on a validated need to transport passengers authorized above. Shuttle bus routes shall not be used to provide domicile-to-duty travel except as authorized above.

(2) The conveyance used must be no larger than the most economical available to accommodate "duty" passengers.

(3) Frequent surveys (at least annually) must be conducted to ascertain that the conditions cited in (1) and (2) remain constant.

c. Space-available transportation on shuttle buses may be provided to the following categories of passengers:

(1) Off-duty military personnel and DoD civilian employees.

(2) Reserve and National Guard members.

(3) Dependents of active duty military and DoD civilian employees.

(4) Retirees.

(5) Visitors to the base (intra-installation only).

Shuttle bus service may be provided with Navy-owned or contract equipment. Expenses for the operation of such services shall be paid from appropriated funds.

#### **3.3.4 Transportation for Morale, Welfare and Recreation (MWR) Programs.**

Transportation provided for activity-approved Morale, Welfare and Recreation (MWR) programs, i.e., athletic teams, and the Chaplain's program, should generally be organized on a group basis large enough to employ buses. The Commanding Officer of an activity may, however, authorize the use of vehicles with seating capacities less than buses where feasible and economically justified.

**3.3.5 Liberty Bus Service.** At naval activities where commercial transportation services are not available, or are inadequate for transporting liberty personnel, activity Commanding Officers may inaugurate liberty bus service. Liberty bus facilities that in any way parallel or compete with common carriers are not to be authorized unless the carriers provide the activity Commanding Officer with a letter indicating an unwillingness, disinterest, or inability to provide adequate service necessary to satisfy the requirements. Liberty bus service shall not be established in lieu of fare charging group transportation services, or used to transport civilians, military dependent personnel, or guests. Bus service furnished to military personnel on base is not considered liberty bus service.

3.3.6 **Emergency Bus Service.** In compliance with Title 10, Section 2632, U.S. Code, transportation between domicile and places of employment may be provided for military personnel and civilian employees during public transportation strikes or other stoppages. This applies only to those who are actively engaged in projects, or the support of projects, the continued delay of which would adversely affect national defense. Fares for such service shall be charged and accounted for as described in paragraph 3.3.2. Routine construction, repair, or overhaul of aircraft, ships, or material peculiar to the Navy shall not qualify under this policy. When public transit strikes or other work stoppages are imminent or in progress, Commanding Officers who determine that transportation between domiciles and places of employment is essential shall submit the following information to CNO, with COMNAVFACENGCOM and the appropriate TEMC as a copy addressee.

- a. Installation or activity requiring transportation support.
- b. General nature of the transportation requirements, including efforts to induce private facilities to provide the necessary transportation.
- c. Titles of critical projects.
- d. Availability, type, and number of vehicles required.
- e. Number of personnel, by project, to be transported.
- f. Proposed fares.

3.3.7 **School Bus.** School bus operation is covered in Chapter 6 of the DoD 4500.36-R. However, a Transit Facility Control Number for each school bus operation should be requested from the COMNAVFACENGCOM (Code PWT). The request for the Transit Facility Control Number should include the name of the activity, the school(s) served, the approximate number of children provided daily transportation, the number of buses involved, the approximate distance traveled one way daily by each bus, and a map showing the route(s). COMNAVFACENGCOM should also be advised when the school bus service is discontinued.

### 3.4 **Operation of Ambulances**

a. **Policy.** The following rules, which are based on a Bureau of Medicine and Surgery (BUMED) instruction (NAVMEDCOMINST 6700.42), shall be strictly adhered to in relation to the operation of Medical Department ambulances.

b. **Use of Ambulances**

(1) Ambulances shall be used only for the transportation of such wounded or injured persons who are eligible by law, regulation, or humanitarian consideration for treatment in Medical Department facilities of any of the armed services.

(2) Ambulances shall not be used in lieu of other vehicles for transporting messengers, mail carriers, baggage, food, commercial type hauling or general use.

(3) Vehicles other than ambulances shall be used to the maximum extent practicable to provide transportation for personnel between remote sections of an activity, or between adjacent activities, for routine medical and dental examinations or treatment, including X-rays, laboratory tests, and dental treatment.

(4) Each ambulance dispatched shall have at least one attendant who is Emergency Medical Technician-Ambulance (EMT-A) trained.

c. Authorization of Emergency Runs. Only personnel delegated by the Commanding Officer may authorize emergency runs, and these authorizations must be in writing. When emergency runs are authorized, a brief report on the necessity for the run shall be fully recorded in the duty log of the responsible Medical Department.

d. Ambulance Speed Limits. All State laws, municipal ordinances, and local command orders and instructions relating to operations of motor vehicles shall be strictly observed.

e. Use of Ambulance Warning Lights and Sirens. Warning lights or sirens are to be used only on authorized emergency runs. Local laws and command regulations shall govern the use of the siren and the red light. It is emphasized that the use of the siren or red light in emergencies does not give the ambulance operator the authority or privilege to violate local traffic regulations. Each designated ambulance operator shall be required to acknowledge in writing that this fact has been brought to his or her attention.

f. Ambulance Driver Qualifications. All ambulance drivers, whether civilian or military personnel, shall have successfully completed the DoT training program (or equivalent) for the operation of emergency vehicles, and shall have a valid U.S. Government Motor Vehicle Operator's Identification Card (OF-346) in their possession while operating ambulances. In addition, ambulance drivers must satisfy State and municipal requirements as to age and other qualifications (see paragraph 3.8.7). Drivers shall be fully conversant with local traffic regulations and local geography prior to being assigned to drive Medical Department ambulances.

g. Operating Records and Forms. Each ambulance shall carry a book or clipboard containing orders and safety precautions prescribed by the local command for the locality. Each vehicle shall also carry the Motor Vehicle Accident Report, Standard Form 91, and an accident identification card (DD Form 518), and all drivers shall be thoroughly instructed in their proper use.

### 3.5 **Assignment and Operation of Law Enforcement Vehicles**

#### 3.5.1 **Use of Law Enforcement/Security Vehicles**

a. Assignment of law enforcement vehicles (EC 0114) shall be limited to law enforcement or security functions. These vehicles shall be used solely by law enforcement/security personnel to perform their assigned functions/duties.

b. Use of law enforcement vehicles for administrative purposes is prohibited.

3.5.2 **Authorized Vehicles.** Navy policy and standards for law enforcement/base security vehicles are regulated by CNO (N09N). That office has issued OPNAVNOTE 5530 of 4 Feb 1991 (to be incorporated in the next update of OPNAVINST 5530.14), providing the following guidance on law enforcement/security vehicles.

The only vehicles that come equipped with a police package are the standard law enforcement/security vehicles specified in Federal Standard 122 as Item 17 (midsize patrol sedan) and the Item 17A (large pursuit sedan). These vehicles are authorized for use by Navy security departments as outlined in subparagraphs a. and b. below. However, since individual activity requirements vary, non-police package compact and midsize sedans or pickup trucks may be substituted for the Item 17 and 17A vehicles. Consideration should be given to the high cost of leasing the 17 and 17A vehicles and fuel economy when determining base security vehicle requirements. Activities should also consider using a mix of vehicles to fill their security vehicle requirements.

a. The Item 17 midsize patrol sedan is equipped with a six-cylinder engine and is recommended for patrol vehicles and can generally accommodate prisoner shields, shotgun mounts, and communication consoles.

b. The Item 17A large pursuit sedan is equipped with an eight-cylinder engine and is primarily used for traffic enforcement and exclusive law enforcement purposes such as prisoner transports absent a designated transport vehicle, i.e., patrol wagon. Standard law enforcement/security vehicle requirements should be coordinated between the Security Department and the Public Works Transportation Department.

3.5.3 **Non-standard Vehicles.** There may be special needs for unmarked vehicles or other non-standard law enforcement vehicles; e.g., vans, and patrol wagons specially designed for prisoner transport, special response vehicles, or transport vehicles for the K-9 Corps. Public Works Departments shall provide non-standard vehicles only when authorized by the major claimants. Requests for such vehicles should be forwarded to major claimants for approval. Requests must cite complete justification for nonstandard vehicles.

3.5.4 **Acquisition of Law Enforcement/Security Vehicles.** Requirements for base law enforcement/security vehicles shall be filled through leasing except when procurement would be more practical or cost effective, e.g., specially equipped vehicles

or low mileage/use vehicles. Leasing is more practical than procurement because of rapid accumulation of mileage and extensive wear. Vehicles should be leased off the Navy's Centralized Leasing Contract for Surveillance and Law Enforcement Vehicles since these vehicles are equipped with heavy duty components, have unlimited mileage, and specific models can be requested. A cost analysis is not required for high-mileage law enforcement/base security vehicles.

### 3.6 **Utilization**

3.6.1 **CESE Utilization Program**. The program provides management information to assist in the evaluation of CESE, including assignment criteria at the activity level. The program is applicable to all Navy shore, Naval Construction Force (NCF) and Special Operating Unit (SOU) activities. Utilization targets are established as local management indicators to identify abnormal variations in vehicle utilization and are not hard performance standards; however, it is important to define and document the basis of each assignment (i.e., mileage, mission/task, hours in use, cost savings, etc.).

3.6.2 **Utilization Analysis/Technical Coordination**. The utilization program is to be technically coordinated by the TEMC. The responsible TEMC shall provide assistance in the performance of a detailed evaluation of the activity's equipment utilization by reviewing and validating all assignments (Class B and Class C) during the activity TMAV. Justification letters for all Class B assignments shall be maintained by the Transportation Department/Division. Upon completion of the review/validation of activity assignments, annual utilization targets for each individual assignment shall be established by the activity. Review and validation by the responsible TEMC shall be at the assignment level. These individual utilization targets shall be based upon one or more of the following criteria: Criticality to, and importance of mission accomplishment; DoD mileage standards; cost effectiveness (i.e., relative costs of alternatives to a full-time assignment); safety of operations; work productivity; and energy conservation. The criterion for each assignment shall be documented and kept on file to facilitate review. For report purposes, the individual assignment targets shall be segregated by alpha code and the average shall become an annual alpha code target per unit. Individual utilization targets at the assignment/unit level shall vary from the alpha code average target due to variations inherent in the "averaging" process. A sample utilization report is shown in figure 3-5 below. Ideally, the actual utilization should equal to the standard. Each activity shall develop targets to meet existing conditions. When these targets are not met, the cause(s) shall be determined and promptly corrected. See paragraph 2.1.2b regarding Class B vehicle assignment requirements.

Sample Utilization Report				As of <u>1 December 01</u>	
Alpha Code	Current Inventory	Vehicle Description	Standard Quarterly Target	Actual Utilization to date	Utilization % to Date
A	10	Compact sedan	30,000	22,000	73%
B	4	36 Pass bus	16,000	12,000	75%

Figure 3-5.

3.6.3 **Equipment Subject to the Program.** All Navy-owned or leased CESE grouped under Alpha Codes A through N (less Alpha Code F), are subject to the program. Alpha Codes R (MHE), S, U, W, and Y may be included at the discretion of the activity and activities are encouraged to do so. A summary of all alpha codes is provided in figure 3-6 below.

**Navy Alpha Codes**

Alpha Code	Description	Alpha Code	Description
A	Sedans	O	Truck, Special Purpose or Design
B	Bus-BOC 37 Pass & under	P	Trailers
C	Bus-BOC 38 Pass & over	Q	Aircraft Ground Support Equipment
D	Bus-Integral	R	Material Handling Equipment (MHE)
E	Station Wagon	S	Construction Equipment *
F	Ambulances	T	Construction Equipment **
G	Truck, ½ Ton Pickup	U	Grounds Maintenance Equipment
H	Panels- Carryall-Trk, ¼ - ¾ ton	V	Railway Cars
I	Truck & Truck Tractor, 1 Ton	W	Powered Railway Equipment
J	Truck & Trk Tractor, 1.5 –2 Ton	X	Fire Fighting Equipment
K	Truck & Trk Tractor, 2.5 Ton	Y	Weight Handling Equipment (WHE)
L	Truck & Tractor, 3 –4 Ton	Z	Miscellaneous Transportation Eq.
M	Truck & Tractor, 5 –10 Ton		
N	Truck & Trk Tractor 11 Ton & up		

Figure 3-6. Navy Alpha Codes

\* Utilization reporting required

\*\*No utilization reporting required

3.6.4 **Equipment Excluded from the Program.** All Navy-owned or leased CESE grouped under Alpha Codes F, O, P, Q, T, V, X, and Z are excluded from the utilization program; however usage (miles/hours) shall be recorded to satisfy other reporting requirements, e.g., TEMES, cost reports, maintenance scheduling, etc. Administrative use vehicles are not to be excluded from the program because of assignment to special use. Some examples of special use are pickup trucks assigned to station fire departments, trucks modified with temporary racks to facilitate handling certain types of cargo, service oriented trucks such as tire and lube service trucks mounted with small air compressors, and truck tractors used with aviation gasoline (AVGAS) trailers.

### 3.7 **Guidelines for Achieving Motor Vehicle Fuel Economy**

3.7.1 **Vehicle Usage Reduction.** Vehicle usage shall be reduced to that essential to mission accomplishment. Executive Order (EO) 13149, Greening the Government through Federal Fleet and Transportation Efficiency, requires Federal agencies to take a leadership role in the reduction of vehicular petroleum consumption. Activities shall adhere to guidance established by the Navy to implement this EO. Walking and use of bicycles should be encouraged where appropriate. The most fuel-efficient mode of transportation consistent with total cost effectiveness shall be employed, considering the following:

a. Bus Systems. Maximize use of scheduled bus systems where economically feasible and justified by passenger density.

b. Pooling. Maximize vehicle pooling. Establish pickup points, and where practical, ensure assigned vehicles are operated with a full payload of passengers and/or cargo.

c. Taxi Service. Where economically feasible, establish a radio-dispatched base taxi (feeder system) employing passenger vans for multiple random-passenger transport to connect with or supplement the regularly scheduled bus routes.

**3.7.2 Operation of Vehicles in a Fuel Efficient Manner.** Refer to the Navy Driver's Handbook, MO-403, and manufacturer's recommendation for guidance on operation of vehicles in an efficient manner. This handbook provides detailed instructions to enable drivers of Navy-owned or leased motor vehicles to operate safely, efficiently and in conformance with applicable laws.

**3.7.3 Ground Fuels Tax Refunds.** The Internal Revenue Code (sections 6421 and 6427), the Code of Federal Regulations (same sections), and IRS Ruling 58-349 set forth the tax laws and eligibility requirements for obtaining credits and refunds for taxes paid on ground fuels used on base. Navy activities shall file refund claims for excise taxes paid for ground fuels used on-base, in accordance with IRS Publication 378, which states that commands can claim. As stated in IRS Publication 378, IRS Form 8849, Claim for Refund of Excise Taxes, shall be used to file a claim. The form provides guidance for determining when a claim should be filed, depending on the amount of on-base usage each quarter. The statute of limitations for filing claims is three years after close of the fiscal year. Section 6421 of the IRS Code points out that if a vehicle is used on a public highway (off-base) at any time during the period of the claim, none of the fuel used in that vehicle qualifies for that claim period. IRS Publication 387, Fuel Tax Credits and Refunds, provides details on filing claims. This publication is available at any tax office. Navy activities were cited in a Navy Audit Service Report in January 1998 for improperly filing for refund of excise taxes paid for ground fuels (gasoline and diesel) used on base.

### **3.8 Testing and Licensing of Vehicle and Equipment Operators**

#### **3.8.1 Policy(See 3.8.1c for NCF/SOU policy).**

a. It is the policy of the Navy to ensure that all military personnel, civilian employees, and contractor personnel operating vehicles and equipment on a Government installation or operating Government owned vehicles or equipment on or off Government property be properly licensed. Most States now have a classified motor vehicle operator's licensing program that includes appropriate examinations to ensure knowledge of traffic laws, ability to read road signs, vision, and color recognition; and to ensure by road test competency to operate a specific class of vehicle. It is Navy policy

to accept, without further testing and examination, a valid operator's license issued by a state or jurisdiction as proof that the applicant has achieved the proficiency level to safely operate non-tactical Government vehicles up to 10,000 pounds gross vehicle weight (GVW).

b. For vehicles over 10,000 GVW range, vehicle operators will have a valid state driver's license that is applicable for the class and type vehicle that will be operated. The Commercial Driver's License Program (CDLP) addressed in section 3.8.13 adequately covers the provisions when a CDL is required. Examination and testing of operators is required for operation of vehicles over 10,000 pounds GVW, buses, or any vehicle carrying placardable quantities of hazardous material, emergency service vehicles, and special purpose vehicles (vehicles not otherwise covered by a CDL), and to military personnel not possessing a valid state license. Further, it is Navy policy to establish and conduct training programs for full-time motor vehicle operators (MVOs) to promote driver safety, fuel-efficient operation, and reduced vehicle maintenance costs. Additional training shall be provided to all operators of police vehicles, ambulances, fire trucks, fuel trucks, buses, motorcycles, and vehicles used for transporting ammunition/explosives and hazardous material. All OCONUS activities must comply with host nation licensing requirements.

c. *Policy for NCF and SOUs.* All military personnel in the NCF and SOUs who operate government owned or leased equipment under the administrative or operational control of COMSECONDNCF, COMTHIRDNCF, or the Naval Facilities Expeditionary Logistics Center shall be qualified and licensed in accordance with the provisions of this section. Under no circumstances shall a vehicle be dispatched to a person who does not have in his/her possession a valid U.S. Government Motor Vehicle Operator's Identification Card (OF-346) that covers the size and type of vehicle requested.

3.8.2 **Applicability.** The policy and procedures set forth herein are applicable to all naval activities, afloat and ashore, including ships, and shall include military and civilian operators of all motor vehicles, construction and specialized equipment. These policies and procedures are not applicable to operators of aircraft ground handling and servicing equipment under the cognizance of the Naval Air Systems Command, or to operators of materials handling equipment (MHE) under the cognizance of the Naval Supply Systems Command. Commanding Officers of shore activities and ships have authority to issue the U.S. Government Motor Vehicle Operator's Identification Card (OF-346) (Figure 3-7) under the procedures prescribed herein, and the Construction Equipment Operator's License (NAVFAC 11260/2), Figure 3-9 in accordance with the procedures set forth in paragraph 3.9. Operators of weight handling equipment (WHE) should refer to NAVFAC P-307, Management of Weight Handling Equipment, for testing and licensing requirements for WHE. For railroad equipment, more specific licensing requirements are addressed in the NAVFAC P-301.



### U.S. Government Motor Vehicle Operator's Identification Card

OF 346 11/85 USCPM FPM Chapter 330		<b>U.S. Government Motor Vehicle Operator's Identification Card</b>		Card No.	Restrictions
Name of Operator (Not Transferable)		Sex	Signature of Operator (Not valid until signed)		QUALIFIED TO OPERATE
					Type Vehicle and/or Equipment      Capacity      Qualifying Official
Date of Birth	Social Security No.	Name and Location of Issuing Unit			
Height	Weight	Hair Color	Eye Color		
				Signature and Title of Issuing Official	OTHER RECORDS (Optional)
Date Issued	Date Expires				
The holder of this card is qualified to operate U.S. Government vehicles and/or equipment specified, subject to the restrictions set forth on the other half of this card. Card must be carried at all times when operating Government vehicles.					NSN 7540-00-634-3999      50346-101

Figure 3-7.

**3.8.3 DoD Contract Personnel.** Contracts and agreements will require that operators comply with licensing requirements of the state and local motor vehicle laws. DOD contract personnel shall not be issued OF-346 (U.S. Government Motor Vehicle Operator's Card) or a Construction Equipment Operator's License (NAVFAC 11260/2). DOD contract personnel assigned to operate either government owned/leased equipment in performance of contract shall be certified, by the contractor and at contractor's expense, as being fully qualified to operate the vehicles/equipment to which they are assigned. The prime contractor shall document all operator qualifications. This documentation shall be provided to the contract administrator prior to any contract employee engaging in any mode of equipment operation. The contract administrator shall retain documentation.

**3.8.4 Motor Vehicle Operator's Testing and Licensing Procedures.** All criteria in this manual, along with other applicable directives, shall be used to establish and implement an effective and efficient licensing program for DoD assigned personnel. The following are some of the key manuals to consult regarding management of the licensing program.

- a. Management, Acquisition, and Use of Motor Vehicles (DoD 4500.36-R).
- b. Commercial Motor Vehicle Safety Act of 1986 (PL 99-570).
- c. Motor Vehicle Driver's and Shipping Inspector's Handbook for Ammunition, Explosives and Related Hazardous Materials, SW020-AF-ABK-010, Basic.
- d. Navy Transportation Safety Handbook, SW020-AG-SAF-010.
- e. U.S. Department of Transportation, Federal Highway Administration, Motor Carrier Safety Regulation, 49 Code of Federal Regulations, Parts 300-999.
- f. State and local laws and regulations.

- g. Defense Transportation Regulation (DoD 4500.9-R).
- h. Storage and Handling of Hazardous Material (NAVSUP P573).
- i. Hazardous Materials Regulations (49 CFR Parts 171-180).
- j. Ammunition & Explosives Ashore , NAVSEA OP-5.

In addition to the procedures prescribed herein, Commanding Officers of activities or installations may prescribe more stringent or additional qualifications, requirements, examinations, or certifications as may be required in testing personnel for prior to issuing the OF-346, or for suspending or revoking the OF-346.

### 3.8.5 **License Applications.**

a. When an OF-346 is required, prospective operators of Government motor vehicles shall be selected and recommended by their military or civilian supervisors based on a prior interview. To obtain an OF-346, Parts I and II of NAVFAC Form 11240/10, Application/Record for U.S. Government Motor Vehicle Operator's Identification Card, shall be completed and signed by the supervisor. The NAVFAC 11240/10 shall be forwarded to the office responsible for issuing the OF-346. The OF-346 may be laminated. The Standard Form 47 or Optional Form 345 (OF-345), Physical Fitness Inquiry for Motor Vehicle Operators, are obsolete forms.

b. The SF-47 and OF-345 are both Physical Fitness Inquiry for Motor Vehicle Operators. Historically, these forms were used to ascertain the physical fitness of Federal employees, whose jobs were not regular motor vehicle operating jobs, to drive Government-owned motor vehicles. They were also used in the renewal of authorizations for all employees. Based on the information provided, renewals were issued or the individual was referred for medical examination. Activities may continue to use either of these forms as tools to manage their licensing program.

Note: The use of a DoD motor vehicle by a civilian employee to obtain a CDL as a condition of employment is authorized since it meets the Ethics Reform Act of 1989.

### 3.8.6 **Operating Government-Owned/Leased Motor Vehicles on Official Business**

- a. Vehicles up to 10,000 pounds GVW. (Includes EC 0330 vans/carryalls.

#### (1) Civilian

(a) Personnel required to operate a motor vehicle to carry out their assigned duties may operate a motor vehicle both on and off base when in possession of a valid state (or host nation, if applicable) license for the type and class of vehicle to be operated.

(b) Drivers not possessing a valid state license may be issued an OF-346 to operate a motor vehicle on base only. The following notation shall appear on the OF-346: "VALID FOR USE ON BASE ONLY."

(c) When the requirement for employment or their primary responsibility is to operate motor vehicles (e.g., Motor Vehicle Operator (MVO)), they shall have in their possession a valid state (or host nation, if applicable) license for the type and class of vehicle to be operated either on or off base.

(2) Military

(a) On base. Shall have in their possession a valid OF-346 for the type and class of motor vehicle to be operated. Possession of a valid state operator's license is NOT required for the issuance of an OF-346 or NAVFAC Form 11260/2. Make the following notation on the OF-346: "VALID FOR USE ON BASE ONLY".

(b) Off base. Shall meet state requirements (or host nation, if applicable) motor vehicle laws and regulations for the area in which the motor vehicle shall be operated. States differ widely in their requirements. Some states require a license from their state, and some recognize a license from another state, even when expired. See paragraph 3.8.1.1 for additional guidance on SOU/NCFs.

b. Vehicles over 10,000 pounds GVW; Vehicles designed to carry more than 15 passengers, including the driver; Emergency Service, and Special Purpose Vehicles.

(1) Civilian

(a) Incidental drivers required to operate a motor vehicle to carry out their assigned duties may be issued an OF-346 to operate a motor vehicle on base only. The following notation shall appear on the OF-346: "VALID FOR USE ON BASE ONLY", but only if the individual does not have the required CDL. All other MVOs operating vehicles on base must have an OF-346 and a valid state license.

(b) All operators of motor vehicles not restricted to on base only driving, shall have in their possession a valid state (or host nation, if applicable) license and an OF-346 for the type and class of motor vehicle to be operated. As a minimum, vehicles operated that are not covered by the CDL shall be reflected on the OF-346. For example, operation of specialized equipment such as material handling equipment, wreckers, runway sweepers, and emergency vehicles, shall require testing prior to issuance of a license. .

(2) Military (SOU/NCF see para. 3.8.1c for additional guidance)

(a) Shall have in their possession a valid OF-346 for the type and class of vehicle to be operated on base or meet state requirements.

(b) Shall be issued an OF-346 and meet state requirements (or host nation, if applicable) motor vehicle laws and regulations for the area in which the

vehicle shall be operated off base. (States differ widely on their requirements. Some states require a license from their state, some recognize a license from another state, even when expired.

c. Driver Education/Training. In addition to driver selection and training set forth in the DoD 4500.36-R, the following training is required (OPNAVINST 5100.12):

(1) Individuals shall not be assigned as a driver of Navy police vehicles, ambulances, fire trucks, and crash and rescue vehicles (emergency vehicles), hazmat, Explosive Ordnance Disposal (EOD) or any other vehicles equipped with any combination of emergency warning devices and/or a siren used in the performance of intelligence, protective services, or criminal law enforcement duties, until they have successfully completed the National Highway Traffic Safety Administration's Emergency Vehicle Operator Course (EVOC) conducted by a Naval Safety Center approved instructor, or other training approved by the Naval Safety Center. Operators shall complete the training every three years thereafter to ensure competency in the safe operation of such vehicles. EVOC instructors shall not instruct unless they have been recertified within the previous three years.

(2) Each individual driver (military and civilian) shall meet these additional requirements and fully understand the operational peculiarities of an emergency vehicle and shall be issued an OF-346 (except contractors) regardless of where the vehicle is being operated and the type, size and weight of the vehicle. All required training shall be documented in the operator's history record file.

(3) For information on the above, contact the Motor Vehicle Safety Division at: Commander, Naval Safety Center, Motor Vehicle Safety Division, 375 A Street, Norfolk, VA 23511-4399, commercial (757) 444-3520 or DSN 564-3520.

d. Basic Summary of Licensing Requirements

Up to 10,000 GVW and less than 15 passengers		
ON BASE		OFF BASE
Civilian incidental	OF-346 or valid state license	Valid state license
Civilian MVO	Valid state license	Valid state license
Military	OF-346	Meet state requirements
NCF/SOU	OF-346	OF-346 and meet state requirements
Over 10,000 GVW or more than 15 passengers**		
ON BASE		OFF BASE
Civilian incidental	OF-346	Valid state license and OF-346
Civilian MVO	Valid state license and OF-346	Valid state license and OF-346
Military/SOU	OF-346	OF-346 and meet state requirements

### **3.8.7 Requirements for Issue of an OF-346**

- a. Comply with paragraph 3.8.5.
- b. Pass a physical examination, when required. See paragraph 3.8.10.
- c. Satisfactory completion of a written test, devised by the activity, that shall ensure the applicant's knowledge of all applicable Federal, State, and local laws and safety regulations pertaining to the operation of the specific type vehicle for which the OF-346 is to be issued.
- d. Satisfactory completion of an operational road test, devised by the activity and administered by personnel who are licensed and qualified to evaluate the applicant's knowledge and operational ability with respect to each type of vehicle for which the applicant is to be issued the OF-346.
- e. Applicants shall be provided instruction on the operator's responsibility for vehicle safety inspection, accident reporting procedures, fuel-efficient operation, preventive maintenance, and official use.
- f. An OF-346 shall not be issued if the applicant's state motor vehicle license has been revoked or suspended.
- g. When there is any reasonable doubt regarding the authenticity or validity of an applicant's state motor vehicle operators license, a prompt inquiry is required, and a certified copy of the applicant's state driving record obtained. Additional inquiries regarding the applicant's driving record can be obtained from the National Driver Register (NDR), National Highway Traffic Safety Administration, U.S. Dept. of Transportation (DoT), Washington, DC 20590. Website address is [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov).

### **3.8.8 Testing Operators for Transportation of Explosives and Hazardous Material**

- a. Regulations established by NAVSEA SW020-AF-ABK-010 are to be applied to all applicants of an OF-346 where operators shall be engaged in transporting ammunition, explosives, or other dangerous/hazardous materials. Operators shall know, understand, and adhere to the requirements of SW020-AG-SAF-010, Navy Transportation Safety Handbook, Volume I and the U.S. Department of Transportation, Federal Highway Administration Motor Carrier Regulations, as well as all State and local laws and regulations regarding the transportation of ammunition, explosives, and other hazardous or dangerous articles.
- b. Hazardous Materials/Hazardous Waste (HM/HW) is pervasive in modern society. One of the most important aspects of HM/HW handling is transportation. The method in which HM/HW is transported can be the determining factor whether an accident or spill could occur, and proper identification of HM/HW shall determine the correct accident/spill response measures to be implemented. The Research and

Special Programs Administration (RSPA) of the U.S. Department of Transportation (DoT) promulgates 49 CFR Parts 100-185 that include the "Hazardous Materials Regulations". The Environmental Protection Agency promulgates 40 CFR Parts 260-265 that pertain to transportation of Hazardous Wasted and Part 302 that addresses Hazardous Substances. Compliance with these regulations, as well as DoD 4500.9-R and NAVSUP P573 is a statutory and regulatory requirement.

### **3.8.9 Optional Form 346 (OF-346) Government Motor Vehicle Operator Identification Card**

- a. The OF-346 shall:
  - (1) Be signed by the qualified issuing official and the operator.
  - (2) Show expiration date in month and year.
  - (3) List/identify the type and class of vehicle the operator/cardholder is qualified/authorized to operate, including capacity.
  - (4) List/identify all restrictions imposed (e.g., specific driving conditions, geographical areas, automatic shift vehicles only, corrective lenses, etc.), including any restrictions noted on the operators state license.
- b. Number each OF-346 and maintain a sequential record of issuance.
- c. A history record file shall be maintained for each individual operator/driver who has been issued an OF-346. This file shall contain all the documentation required for issuance/renewal of the OF-346 and related driving record. This includes any moving violations and/or suspensions, recorded against the OF-346. Pertinent information shall be forwarded to the personnel office for retention in the operator's Official Personnel File (OPF).
- d. For NCF/SOU, all pertinent personnel licensing documents shall be filed in the individual's License Record and stored in the custody of the command License Examiner.

3.8.10 **Physical Fitness Review.** Every four years, or less if deemed necessary, activities shall provide for the review of physical fitness of all civilian employees who are required to possess an OF-346 to operate government owned or leased motor vehicles in accordance with standards and procedures established by the Office of Civilian Manpower Management. Activities have the option of conducting this review on a more frequent basis and are recommended to do so for regularly employed MVOs. The Physical Fitness Inquiry (OF-345 or SF-47) is to be completed and retained in the individual's record. A physical fitness review of personnel who only require a valid state driver's license to operate government owned or leased motor vehicles shall be conducted in accordance with the licensing guidelines of the state in which the license was issued.

### 3.8.11 **Expiration and Revocation of OF-346**

a. **Expiration.** The OF-346 is valid for a period of four years from the date of issue and shall be renewed prior to the end of the expiration month. Each individual is responsible for ensuring state licenses are kept current. The OF-346 renewal is dependent upon a determination by the issuing authority that the operator continues to meet the prescribed physical standards and continues to demonstrate competence in driving the motor vehicles the individual is authorized to operate.

For NCFs/SOUs, the license examiner shall maintain a tickler file of each operator's license expiration date. Renewal action should start approximately 90 days before the expiration date.

b. **Revocation.** Activities shall establish programs to take adverse, disciplinary, or other appropriate action against drivers who fail to operate government motor vehicles in accordance with applicable laws and regulations. Such programs shall include provisions for the assignment of points for official duty related moving traffic violations and the suspension and revocation of the authority to operate government motor vehicles. As a minimum, activity directives shall include convictions for driving under the influence of alcohol or narcotics and leaving the scene of an accident without identifying oneself as sufficient cause for suspension or revocation of driving privileges. The OF-346 can be suspended or revoked for cause by the activity Commanding Officer or by the designated individual with that authority. A suspended OF-346 can be reinstated after a predetermined designated time period, but a revoked OF-346 shall not be restored until it is determined the operator is fully qualified through evaluation, re-examining, and testing. All revoked or suspended licenses shall be returned to the license office without delay.

### 3.8.12 **National Driver Register (NDR)**

a. The DoT provides a central U.S. driver record identification facility that contains information on drivers whose licenses have been denied, suspended, or revoked. The states provide DoT with data for the register (computer inquiry), which is used for evaluating initial and renewal applicants for licensing.

b. DoD components may make use of data in the NDR in evaluating applicants for an OF-346. As a minimum, DoD components shall utilize the NDR to verify driving records on initial applicants for an OF-346 when the applicant does not possess a valid state driver's license, or when the issuing activity has reason to suspect a poor driving record of an applicant with a valid state license. DoD components shall not provide the Department of Transportation with data on OF-346 suspensions or revocation action. DoD components may also utilize the NDR when issuing a new or renewal OF-346. Data received from the NDR shall be utilized by the issuing agency to deny or approve OF-346 issue/renewal actions.

c. Activities may obtain instructions and material for participation in the NDR by contacting the National Drivers Register, National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, DC 20590.

| **Special Note:** In the interest of personnel safety, when an individual's state license is revoked, the OF-346, as well as the Construction License, 11260/2, shall be revoked.

| 3.8.13 **Commercial Driver's License Program (CDLP)**. The Commercial Driver's License Program (Public Law 99-570) was established by the Commercial Motor Vehicle Act of 1986. The Act applies both to interstate and intrastate drivers.

a. The Act requires that drivers of commercial vehicles: (1) Have a single driver's license; (2) be tested for the knowledge and skills needed to drive a commercial motor vehicle; and (3) be disqualified from driving a commercial motor vehicle if the driver commits certain criminal or traffic violations.

b. Commercial motor vehicles are defined below (See CFR 49 Part 383).

(1) Has a manufacturer's gross vehicle weight rating (GVWR) or gross combination weight rating (GCWR) of 26,001 pounds or more, or has a GCWR, inclusive of a towed unit with a GVWR of more than 10,000 pounds; or

(2) Designed to transport 16 or more passengers, including driver; or

(3) Is of any size and used in the transportation of materials found to be hazardous for the purposes of the Hazardous Materials Transportation Act and which require the motor vehicle to be placarded under the Hazardous Materials Transportation Regulations (49 CFR Part 172, Subpart F).

c. As of 1 April 1992, personnel who operate a commercial motor vehicle on public highways must possess a state-issued Commercial Driver's License (CDL).

d. The following personnel are waived/exempted from the Act's requirements and are not required to obtain/possess a CDL:

(1) Military personnel on active duty who operate equipment owned or operated by the Department of Defense in pursuit of military purposes.

(2) All operators of fire fighting and other emergency equipment as well as operators of farming equipment.

| 3.8.14 **Controlled Substance and Alcohol Misuse Program**

a. All activities are required to establish a drug and alcohol testing prevention and control program for all personnel on the Testing Designated Position (TDP) list and all CDL licensed operators of government equipment. Programs shall include controlled substance and alcohol testing in six cases: (1) Pre-employment; (2) Post-



accident; (3) Random; (4) Reasonable suspicion; (5) Return to duty; and (6) Follow-up. CFR 49 Part 40 and Part 382, and OPNAV 5355.4 and 5350.4C apply.

### 3.9 **Construction, Specialized and Railroad Equipment Operator Testing and Licensing Program**

3.9.1 **Applicability to all Personnel.** All personnel who are or may be assigned to duties involving the operation of government furnished construction, specialized and railroad equipment shall be tested and licensed in accordance with the provisions of this publication before being permitted to operate such equipment. Equipment listed in Figure 3-8 below requires licensing under this program. Refer to the NAVFAC P-307 for testing and licensing weight handling equipment.

<b><u>NAVFAC Equip Code</u></b>	<b><u>Equipment Description</u></b>
2520 thru 2521	Asphalt/Water Distributor
3531 & 3710	Core Drill and Earth Auger
4230 thru 4270	Crawler Crane
4310	Ditching Machines
4330 thru 4350	Excavators
4410 thru 4420	Graders
4530 thru 4531	Loaders
4610 thru 4640	Rollers
4730 thru 4750	Scrapers
4760 thru 4805	Off-highway Trks, Trailers, & Tractors
4820 thru 4851	Crawler Tractor
4872 thru 4894	Wheel Tractor
5460	Man lift/Aerial Platform
5700 thru 5757	Sweepers and Snowplows
5820 and 5835 thru 5842	Refuse Trucks
6210 thru 6240	Railroad Car, Self-propelled, all types
6530 thru 6580	Railway Locomotives
8160 thru 8430	Cranes, All, including floating

Construction, Specialized and Railway Equipment Requiring Licensing  
Figure 3-8.

### 3.9.2 **Personal and Physical Qualifications**

a. **Age.** Applicants must have attained their 21st birthday, except that military personnel assigned to activities operating or preparing to operate outside the continental United States must have attained their 18th birthday.

b. **Physical Faculties and Fitness.** A periodic physical examination by a medical officer is requisite. See Federal Personnel Manual 930-A-1 for civilian personnel. In addition, the applicant must meet the minimum requirements described below. Conformance to or deviation from these requirements must be noted by the examining

medical officer and such findings must be forwarded to the licensing office for inclusion in the applicant's file.

(1) Limbs. Applicant's arms, hands, fingers, legs, and feet must be sufficiently intact and functional to permit safe operation of construction equipment, even under severe operating conditions.

(2) Eyesight. Applicants must have minimum vision of 20/30 Snellen in one eye and 20/50 Snellen in the other eye, with or without glasses/contact lenses.

(3) Color Perception. Applicants must be able to distinguish red, green, and yellow colors regardless of position of colors.

(4) Hearing. Applicant's hearing, with or without hearing aid, must test 15/20 for ordinary conversation in one ear.

(5) Physical Fitness. Applicants must evidence sufficient strength, endurance, agility, and speed of muscular reaction to meet the demands of equipment operation.

c. Physical Defects or Emotional Instability. Notwithstanding the required physical examination, evidences of physical defects, poor attitude, or emotional instability which would render applicants a hazard to themselves and others, or which in the opinion of the examiner would interfere with an applicant's safe or efficient performance of duties, are sufficient cause to disqualify an applicant. For an operator who has previously established qualifications to operate, deviations from the physical requirements are not necessarily totally disqualifying. However, where such deviations exist, competent medical and management authorities shall give special consideration to each individual case and may recommend waivers. Waivers may be approved by the activity commanding officer. Waivers shall not be granted for applicants who have never before established operator qualifications. Any limitations imposed by reason of physical defects shall be noted on the license and record (NAVFAC Forms 11260/2 and 11260/3).

(1) Grounds for Disqualification. Justification for disqualification of the applicant on the grounds of physical defect or emotional instability may be derived by the examiner from interviews, reference to the applicant's medical and personnel records, analysis of accident reports involving the applicant, and the results of specialized clinical tests. Specialized clinical tests by the examiner may consist of the use of devices to indicate the applicant's depth perception, brake reaction time, field of vision, manual dexterity, tendencies to dizziness, or similar pertinent characteristics.

d. Language Ability. Applicants should be able to write essential words in English or the prevailing language in the area of operation. Applicants must be able to speak English or the prevailing language and must be able to read and understand signs and orders applicable to the operation of the equipment.

e. Other Qualifications. Commanding officers of naval activities may require the applicant to meet additional personal and physical qualifications for operating specific items of equipment.

3.9.3 **Prerequisite Safety Instruction, Written Examinations, and Performance Qualification Tests.** All applicants for initial licensing shall be instructed and tested on all applicable procedures of Safety Precautions, activity safety guidance, and specific safety instructions for the equipment for which the applicant is to be licensed. Initial applicants must pass the written tests and demonstrate operating proficiency by passing the performance qualification test. Each activity should develop tests as needed, to support their individual activity requirements.

3.9.4 **Acceptance of Construction and Railroad Equipment Operator License.** The Construction Equipment Operator License, NAVFAC 11260/2, figure 3-9 is to be honored throughout the Navy. The standards of the operator's testing and licensing programs covering construction and railroad equipment should be such that only qualified operators are issued licenses regardless of where the licenses are issued. The back of the license shall show the equipment types, size and capacity, attachments, type controls and the initials of the examiner for each piece of equipment an individual is licensed to operate.

Construction Equipment Operator's License				
CONSTRUCTION EQUIPMENT OPERATOR LICENSE NAVFAC 11260.2 (9-74) Supersedes NAVDOCKS 2754 S/N 2103-LF-004-1512			CARD NO. N62688-0000-6-30	
NAME OF OPERATOR E. J. McGee			DATE ISSUED 8-22-95	
DATE OF BIRTH 6-19-50			DATE EXPIRES 6-19-97	
COLOR OF HAIR Brown	COLOR OF EYES Blue	HEIGHT 5'11"	WEIGHT 180lb.	
THE HOLDER OF THIS CARD IS QUALIFIED TO OPERATE U.S. GOVERNMENT HEAVY EQUIPMENT AS SPECIFIED ON REVERSE OF THIS CARD				
SIGNATURE OF ISSUING OFFICIAL			TITLE CERTIFIED EXAMINER	
SIGNATURE OF OPERATOR			TITLE OF POSITION Equipment Operator	
NOT TRANSFERABLE Card must be carried at all times when operating Government equipment.				

Figure 3-9.

### 3.9.5 **Use and Limitations of Licenses**

a. Significance. The Construction Equipment Operator License, NAVFAC 11260/2, is official evidence that the person named therein has been officially accepted as qualified to operate the types of equipment specified on the license.

b. Authorized Operation. Possession of the Construction Equipment Operator License, NAVFAC 11260/2, does not of itself constitute authorization to operate this equipment. Such authorization must be specifically obtained from the responsible supervisor charged with responsibility for equipment operations.

c. Use and Possession of Licenses. Operators, who have been issued a valid Construction Equipment Operator License, NAVFAC 11260/2, shall have such license on their person when operating construction or railroad equipment.

d. Equipment Unit Familiarity Checkouts. The Navy's construction and railroad equipment inventory consists of a wide variety of equipment types, makes, and models and innumerable variations in the control mechanisms and operational characteristics. For this reason, it is not economically feasible to devise and administer examinations and issue licenses to cover each equipment variation. The objective of the licensing program is to ensure that operators are qualified to operate equipment having the same essential basic functional characteristics. Possession of a valid Construction Equipment Operator License, NAVFAC 11260/2, means that the person holding such license is qualified to operate any unit of equipment with the characteristics of the equipment types authorized on his license provided the operator has been checked out on the specific unit to be operated. Satisfactory checkout is the responsibility of the responsible equipment operations supervisor. See the P-301 for additional guidance on licensing for railroad equipment.

### 3.9.6 **Testing and Licensing Program Administration**

a. Organization. Each activity commanding officer shall designate, in writing, the official and organization responsible for the management and administration of the program for instructing, testing, and licensing of construction and railroad equipment operators. Normally this shall be the activity public works officer and/or the transportation organization head that is normally responsible for the operation and maintenance of this type equipment. This individual is also responsible for testing and licensing of motor vehicle operators at naval activities.

b. Designation of Qualified Instructors/Examiners. The head of the activity organization responsible for licensing shall select, designate examiners. These shall be selected from the best-qualified licensed equipment operators. Qualified instructors/examiners must hold a license for the specific equipment for which they are conducting operator testing and be completely familiar with all aspects of its safe and effective operation. Further, they shall be competent to effectively instruct, examine, and test license applicants. This includes the capability to develop and conduct formal courses of classroom instruction on the various aspects of equipment operation and safety.

c. Instructor/Examiner Training. There is no prescribed formal or required course of instruction for training operator instructors/examiners. All manufacturers of equipment which the Navy procures provide operator instruction. It is desirable that operator instructors/examiners and operators attend these manufacturers' schools where available. A list of recommended courses of instruction may be obtained from the appropriate Transportation Equipment Management Center (TEMC).

NCF and SOU License Examiners shall be designated in writing by their Commanding Officers and should hold PRCP Skill 590.1 which is obtained by successful completion of the course at either Naval Construction Training Center (NCTC), Port Hueneme, CA, or NCTC Gulfport, MS.

### 3.10 **Testing of Construction and Railroad Equipment Operators**

#### 3.10.1 **Application for Test and License**

a. Purpose of NAVFAC Form 11260/1. This form provides a progressive presentation of facts and developments pertinent to applying for and issuing or denying licenses to applicants.

b. Use of NAVFAC Form 11260/1. Part I of the application is prepared by the applicant and sponsor. The applicant's supervisor endorses part II. Parts III and IV are prepared by the license office. The use of appropriate spaces in Parts III and IV and the preparation and routing of copies needed simplify and reduce paperwork.

3.10.2 **Status Control of Applications for Tests and Licenses.** Use of a status control sheet shall enable visual progress control of individual applications by means of brief entries for each step in the application, test, and license process. Its use enables follow-through action and facilitates scheduling tests and examinations. Following are some of the items, which might be included on a status control sheet:

- a. Applicant's name.
- b. Description of equipment license requested.
- c. Date of supervisor's request for test and license.
- d. Date and status of action notice to supervisor.
- e. Date and results of physical examination.
- f. Date and results of written test and prerequisite information if required.
- g. Date and results of performance qualification test.
- h. Date and status of license issuance or denial.

3.10.3 **Physical Examinations and Clinical Tests.** The form and content of physical examination certificates may be determined by the medical office making the examination, with due consideration for the provisions of this publication. The United States Civil Service Commission Certificate of Medical Examination, Standard Form 78, is an acceptable form for this purpose. Clinical test results may be presented in narrative form or graphically as devised locally.

#### 3.10.4 **Written Examinations**

a. Formats. Test formats have been prepared in question and answer form. These formats, complete with approved questions and correct answers, are available from the TEMC. These test formats cover a variety of the most commonly used

equipment. Tests for equipment not covered shall be developed locally using the prescribed test formats as a guide.

b. Use of Written Examinations. The testing procedure seeks to determine whether the applicant knows the answers to questions asked in the written examination involving nomenclature, equipment application, safety, operator maintenance, and similar data.

c. Evaluating and Scoring Written Examinations. Answers should not be marked wrong if the response is substantially correct but not well stated. Although the answers that are provided with the tests have been screened and approved, equipment operation is not an exact science. Some answers, however, are matters of fact and are not subject to interpretation. In cases of dispute, the judgment of the examiner shall be final.

d. Grading of Examination and Record. Incorrect answers should be circled. The required percentage of correct answers is 70 percent. The latest graded examination shall be filed in the operator license jacket and shall not be returned to the applicant; however, the applicant should be notified of the grade attained and all incorrect answers critiqued.

3.10.5 Training Program for NCFs/SOUs. Poor equipment operating practices and habits cause mishaps and premature equipment breakdowns. An effective training program on the procedures for issuing or renewing a license reduces poor practices, mishaps, and habits. In addition to being supervised by the license examiner, this training program must be supervised by the equipment officer, safety officer, the applicant's supervisor, and other qualified operators.

a. Training License. Equipment training licenses are issued to personnel who meet all the required physical and mental qualifications to be licensed, but need more on-the-job training on a piece of equipment. The training license expiration date should not exceed 30 days from the date of issue and must have the "work learner" stamped on the face. The license is only valid when the trainee is accompanied by a qualified instructor. Training licenses are not required to operate Navy equipment as part of formalized training programs.

b. Course of Instruction. In addition to learning how to operate equipment, an operator trainee is required to study a course of instruction. This locally prepared course must include, but need not be limited to, the following subjects.

(1) Fundamentals of vehicle operation, including the functions and proper use of major assemblies and attachments and equipment limitations.

(2) Responsibilities before, during, and after operation maintenance.

(3) Safety precautions and accident prevention through safe driving practices.

(4) Traffic laws, rules and regulations, hand signals, traffic signs, signals, and markings.

(5) Accident reporting procedures and other forms and reports that an operator is responsible for completing.

### **3.10.6 Performance Qualification Tests**

a. Formats. Formats should be prepared to conform to functional groups, corresponding to operational characteristics of the specific types of the currently assigned construction equipment. Formats for railroad equipment is included in appendix B of the Navy Railroad Operating Handbook, NAVFAC P-301 and may be used as guides to develop formats for construction equipment. Sample formatting is also available in the NAVFAC P-307, Management of Weight Handling Equipment.

b. Use of Performance Qualification Tests. The purpose of the performance qualification testing procedure is to enable a qualified examiner to evaluate the operating skills of an applicant. It is assumed that the applicant, because of experience and/or training, is sufficiently capable of performing the various tasks called for by the problem situations described in the tests. These situations have been carefully devised to reflect typical equipment operations so that they can be set up and administered with the most economical use of funds, facilities, man-hours, and equipment time.

c. Evaluating and Grading Performance Qualification Tests. Performance qualification tests shall be graded as satisfactory or unsatisfactory. If subsequent "make-up" tests are authorized, only those items that were checked adversely need be tested again. The examiner shall initial and date each "group" on the performance qualification test to denote completion of that group. In evaluating these tests, examiners must be guided by the applicant's performance rather than his experience, background, and history. The latest graded performance test shall be filed in the operator's license jacket.

d. Notation on Failures. A short line is provided before each item on the performance qualification test form. The examiner shall make a check mark to denote that the applicant has correctly performed and/or answered the question. The examiner shall indicate by zero or circle where applicant fails to perform or answer correctly. The examiner shall provide a short written explanation of all failures. Items on test forms not applicable shall be marked N.A.

### **3.11 Test Facilities and Equipment**

3.11.1 Test Facilities. Test facilities include course sites, flags, barricades, and similar items or actual working conditions. These are described in detail in each performance qualification test under the operating problem or situation requiring such facilities. Figures provided with the tests illustrate suggested course layout, equipment positioning and operation, and related items for certain performance qualification tests.

3.11.2 **Test Equipment.** Test equipment refers to units of equipment in use for testing purposes. Ordinarily these units are used for other work and assigned for test purposes as required. Caution should be exercised to ensure that the test equipment is in a safe operable condition when furnished to an applicant for operation. The unit of construction or railroad equipment furnished to the applicant must conform to the same basic functional characteristics, attachments, types of control, and similar details as the equipment noted in the application for test and license, NAVFAC 11260/1, figure 3-10.

## 3.12 **Licensing**

3.12.1 **Essential Elements of Construction Equipment Operator License (NAVFAC Form 11260/2).** The essential elements of NAVFAC 11260/2 and the Construction Equipment Operator License Record, NAVFAC 11260/3) (Figure 3-11), are identification, qualification, limitation, authorization, and validity. The NAVFAC 11260/2 is shown in figure 3-9.

### Application for Construction Equipment Operator's License (NAVFAC 11260/1) (Sample)

*Read the PRIVACY ACT STATEMENT on reverse before completing this application*  
**APPLICATION FOR CONSTRUCTION EQUIPMENT OPERATOR LICENSE**  
NAVFAC 11260/1 (REV. 8/78)  
NO BIDDING REQUIRED

PART I - APPLICATION		
1. NAVAL ACTIVITY Naval Station Norfolk	2. APPLICANT'S NAME E. J. McGee	3. RANK, RATE OR CIVILIAN STATUS Equipment Operator WG10
4. DEPARTMENT, DIVISION AND/OR SHOP ASSIGNED TO P.W.D. Transportation Division	5. APPLICANT'S JOB TITLE Heavy Equipment Operator	
6. DESCRIPTION OF EQUIPMENT LICENSE REQUESTED		
(a) TYPE OF EQUIPMENT Excavator	(b) TYPE OF CONTROL Hydraulic	(c) TYPE OF ATTACHMENT Bucket
7. STATEMENT OF QUALIFYING EXPERIENCE Applicant has had 4 years experience in private contractor employment. He has had two years with the Navy as a heavy equipment Operator.		
8. DESCRIPTION OF EQUIPMENT APPLICANT IS CURRENTLY LICENSED TO OPERATE  Employee is presently licensed to operate Front End Loaders, Tractor Dozers, and Motor Graders		
9. SPONSOR'S STATEMENT OF APPLICANT'S READINESS AND/OR PREPARATORY TRAINING FOR TEST (NOTE: The sponsor can be either a qualified instructor or licensed operator)  The applicant, Mr. McGee has demonstrated proficiency in operating the equipment; he has made application for during a 6 week training period.		
<div style="display: flex; justify-content: space-between;"> <div>Signature _____</div> <div>Sponsor _____</div> </div>		
PART II - REQUEST FOR ADMINISTERING TESTS AND EXAMINATIONS AND ISSUING LICENSE		
FROM: Transportation Division Director TO: P.W.D. License Examiner		Date 15 Aug 199__
It is requested that the license for equipment described in item 6 above be issued to this applicant upon his successful completion of the required examinations and tests.		
<div style="display: flex; justify-content: space-between;"> <div>Signature _____</div> <div>Title _____</div> </div> <div style="text-align: center;">Department, Division or Shop Supervisor</div>		

(OVER)

Figure 3-10.



## Construction Equipment License Record

<b>CONSTRUCTION EQUIPMENT OPERATOR LICENSE RECORD</b>					<small>NAVJAG 11260/3 (Rev. 3-78) S/N 0105-LP-012-8015</small>				
LICENSE NO.		NAME		DATE OF BIRTH	VISION		SPECIAL REQUIREMENTS FOR		OTHER
N62688-0000-6-30		E. J. McGee		6-19-50	None		Hearing Aid required		N/A
EQUIPMENT TYPE DATA			EQUIPMENT LICENSED TO OPERATE			LICENSING DATA			
BASIC UNIT	ATTACHMENT	TYPE OF CONTROL	ISSUING ACTIVITY	EXAMINER	DATE ISSUED	DATE REVOKED	EXPIRATION DATE	RENEWAL DATE	DATE OF PHYSICAL EXAM.
Front Loader	Bucket	Hyd	PWD NAVSTA NORFOLK	E. H. Barnes	7-20-93		7-20-95	6-19-95	6-12-95
Dozer	Blade	Hyd	PWD NAVSTA NORFOLK	E. H. Barnes	7-20-93		7-20-95	6-19-95	6-12-95
Grader	All	Hyd	PWD NAVSTA NORFOLK	E. H. Barnes	7-20-93		7-20-95	6-19-95	6-12-95
Excavator	Bucket	Hyd	PWD NAVSTA NORFOLK	E. H. Barnes	7-20-93		7-20-95	6-19-95	6-12-95

Figure 3-11.

a. Identification. The principal identifying entries are the name of the operator and the license number.

(1) Name. The operator's name, as contained in official personnel records, should be noted in this space. Use of permanent personnel identification numbers is optional.

(2) License/Card Number. The entry in this space calls for a sequential number not likely to be duplicated and one that can be issued by any naval activity. It incorporates a two-part figure. The initial part is the activity number or unit designation of the original license issuing activity. The second part is the appropriate sequential number in order of issue. The license number remains in force, no matter where the operator is serving, until the operator's military or civilian service is terminated.

b. Qualification. Entries in this category are grouped under the general heading "Equipment Type Data." These comprise descriptions of the functional characteristics of the types of equipment that the operator is licensed to operate.

(1) Basic Unit. Typical notations in this space are grader, crawler tractor, and front-end loader. Also included is the type of controls, such as hydraulic, mechanical, and air.

(2) Attachment. All.

(3) Type of Control. All.

c. Physical Limitation. Entries in this category are shown only on the license and license record cards, NAVJAG Forms 11260/2 and 11260/3, as application under the headings "Vision" and "Hearing" and so annotated on the license.

(1) Vision. Typical notations for deviations from normal may be "glasses" and "daytime."

(2) Hearing. A typical notation for deviation from normal may be "hearing aid."

d. Authorization. Evidence of official authorization, as a duly licensed construction equipment operator, is contained in the initial heading under "Licensing Data."

(1) Issuing Activity. The proper entry under this heading is the abbreviated name of the issuing activity. For example, WPNSTA Yorktown or NAVSHIPYD Norfolk.

(2) Examiner. The proper entry under this heading is the printed name and full signature of the examiner.

(3) Date Issued. Abbreviated entries, issuing date, month (Jan, Feb, etc., not by number), and year .

e. Validity. License to operate equipment type as noted specifically under "Equipment Type Data" remains in force until revoked. If the license to operate some equipment types is revoked, the license to operate whatever unrevoked equipment types are shown on the license remains valid. As noted in paragraph 3.13.3 of this publication, the operator must turn in the license (NAVFAC 11260/2) to the licensing activity when all equipment types have been revoked.

(1) Date Revoked, NAVFAC 11260/3. Abbreviated entries of the date, month (Jan, Feb, etc., not by number), and year of revocation are to be made.

(2) Operator's Birth Date. Abbreviated entries, date, month (Jan, Feb, etc., not by number), and year.

3.12.2 **History Record and License**. The Construction Equipment Operator License Record, NAVFAC 11260/3 noted in figure 3-11 above is sufficient in size to include the several types of equipment one operator is licensed to operate. This form should be retained in the file as a permanent record and backup data for the preparation and issuance of the Construction Equipment Operator License, NAVFAC 11260/2.

### 3.13 **License Issuance, Renewal, Suspension and Revocation**

3.13.1 **License Issuance**. The Construction Equipment Operator License, NAVFAC 11260/2, shall be issued or validated only when all requirements for the specific license are complied with and attested to, in writing, by an authorized examiner.

#### 3.13.2 **Renewal**

a. Expiration and Renewal Frequency. The Construction Equipment Operator License, NAVFAC 11260/2, shall be renewed every four years for all equipment types authorized on the license. Expiration dates for all authorized equipment shall not exceed four years from the date of issuance.

b. Procedure. The licensing office of the activity holding the operator's license file shall use a tickler file to flag renewal action approximately 90 days before the expiration date. Arrangements for renewal examinations and tests must be made early enough to enable all items to be cleared before the expiration date. Expiration and renewal or issue dates shall be noted on NAVFAC Forms 11260/2 and 11260/3.

c. Requirements for Renewal. The following elements of the examination and test complex are required every four years: physical examination and clinical tests for reaction time, etc.

3.13.3 **Suspension and Revocation.** Licenses may be suspended or revoked for cause at any time by the licensing office. Licenses shall be automatically suspended when the operator is charged with a reportable accident as defined in OPNAVINST 5102.1, Accident Investigation and Reporting. In such cases, the requirements for renewal shall consist of those elements in paragraph 3.13.2.c considered necessary by management after investigation and consideration of the circumstances relating to the accident and any additional factors devised by the examiner after review of the accident report. In cases of suspension for chargeable accidents, the renewal examination and tests shall be given not later than 15 days after suspension where practical. Of special note, if an operator's state license is revoked or suspended, then the operator shall report this information to the immediate supervisor on the next duty day following the revocation or suspension of the driver's license.

a. Date Revoked Justification. The examiner should initial notations in the "Date Revoked" column of NAVFAC 11260/3. Supporting justification for this action shall be kept in the equipment operator's license file.

b. Revoked License Return. When all equipment types are revoked, the operator license (NAVFAC 11260/2) shall be returned to the license office without delay.

3.14 **Construction Equipment Operator License Jacket.** All relevant forms and supporting data shall be kept in the operator's license jacket. There shall be an individual jacket kept for each applicant and operator. Each operator's license jacket shall contain the following as a minimum:

a. Application for Construction Equipment Operator License, NAVFAC 11260/1 or equivalent.

b. Construction Equipment Operator License Record, NAVFAC 11260/3 or equivalent.

c. Copy of Construction Equipment Operator License, NAVFAC 11260/2.

d. Certificate of Medical Examination CSC Standard Form 78 or equivalent and any clinical tests.

- e. Written test (graded and signed by examiner and dated).
- f. Performance test (graded and signed by examiner and dated).
- g. Training records pertinent to licensing.

**3.15 Use of Government-Owned Transportation Equipment by Commercial Contractors.**

DoD policy is for contractors to provide all necessary transportation equipment needed for contract performance when an activity transportation function or sub function is to be contracted (service contract), or when an entire Government-owned facility is to be contractor operated (GOCO). However, when excess Government-owned equipment is available, and it is determined to be in the best interest of the Government for the contractor to use the equipment, it shall be released to the contractor in an "as is" condition and used by the contractor for contract performance. All equipment furnished to a contractor should be identified/listed in the contract by registration number, type (description), and status code.

**3.15.1 Contractor Use of GSA Fleet Vehicles** Use of GSA vehicles by contractors can be authorized for agencies /activities undergoing CA studies and GSA conversions. GSA vehicles are normally provided to contractors under Cost Reimbursable and Fixed Priced Contracts. The Federal Acquisition Regulation (FAR) 45.304, Providing Motor Vehicles, includes guidance to agencies that provide contractors with government owned or leased motor vehicles. Additional guidance on contractor use of government supply sources including the use of GSA Fleet Vehicles can be found in the FAR Subpart 51.1 and 51.2. The contracting agency/activity Contracting Officer is responsible for complying with the referenced FAR provisions. The following criteria is applicable:

- Authorization will accomplish agency contractual objectives.
- Demonstrates projected savings to the Government (contract file must document projected savings).
- Proof of liability insurance required.
- Use of vehicles is limited to contract which authorizes use.
- Contractors are prohibited from using vehicles for Home-to-Work transportation consistent with Public Law 99-150.
- Official use only provisions apply under DoD 4500.36R.

**3.15.2 Government Furnished Equipment (GFE).** GFE provided to a contractor that shall be replaced by the Government shall be assigned status code "E". An IO shall be established to properly validate these requirements.

**3.15.3 Equipment Not Replaced by the Government.** All Government-owned transportation equipment provided for use by commercial contractors which will not be replaced by the Government, shall be assigned status code "C." An IO shall not be established for this equipment.

3.15.4 **Vehicle Identification in Contract Use.** Transportation equipment acquired for official purposes by a naval activity and operated by a contractor shall be marked to indicate U.S. Government ownership in accordance with the DoD 4500.36-R and this publication. For "C" status equipment, special markings such as contract number, name of firm, etc., may be used when approved by the responsible TEMC.

3.16 **Motor Fuel Security Measures.** The increasing cost and scarcity of motor fuel may require special security measures in certain areas to prevent theft. A Fuel Automated Dispensing System (FADS) can function both as a theft deterrent and as an inventory control system.

3.17 **Recording Fuel Issues by Service Stations and Fuel Trucks.** Procedures shall be established at each activity responsible for fuel management to ensure adequate fuel accountability. Methods existing for dispensing and accounting for fuel issues vary among activities from totally manually operated to fully automated systems.

3.17.1 **Systems.** Activities interested in updating or changing their system of dispensing and/or control of fuel may request EFD/TEMC assistance.

3.17.2 **Records.** Each activity shall maintain accurate records of fuel issues by equipment registration/identification number. Records of fuel issue by equipment registration/identification number shall be maintained by the Transportation Department/Division for management evaluation. Records of bulk issues to fuel servicing tank trucks and the subsequent issues to equipment shall similarly be recorded and reconciled.

3.18 **U.S. Government Fleet Services Cards.** U.S. Government Fleet Services Card and commercial credit cards have been authorized for use by U.S. Government agencies in obtaining commercial service station motor vehicle fuel and services. Although the use of Fleet Services Cards is not mandatory and you are free to arrange for an alternative method of paying for fuel if you so choose, GSA strongly encourages you to take advantage of this new technology. The U.S. Government Fleet Services Cards may provide the following:

- Fuels: Regular unleaded, premium unleaded, special unleaded, regular leaded, premium leaded, aviation grade, unleaded for boats, diesel and diesel marine fuel, fuel oil, and aviation turbine fuel. Alternate fuels: methanol, ethanol, gasohol, liquefied petroleum gas (LPG) (Propane/Butane), and compressed natural gas (CNG).
- Lubricating services and lubricants (including differential and transmission lubricants) as well as ethylene glycol antifreeze where needed.
- Oil and air filter elements and servicing.

- Other services such as battery charging, vehicle washing, tire services, and emergency maintenance (for example, spark plugs, belt changes, and windshield wiper blades).

3.18.1 **Application.** The U.S. Government Fleet Services Card must only be used when motor pool or similar type facilities are not readily available. Detailed information on the acquisition, accounting, and control of U.S. Government Fleet Services Cards may be obtained through the TEMC.

3.18.2 **Use of Self-Service Gasoline Stations.** Operators of Navy motor vehicles who purchase gasoline with the Fleet Services Cards are required to use service stations that shall accept Government cards. When the Fleet Services Card is used for the purchase of gasoline, operators shall be instructed to use self-service gasoline pumps in order to reduce costs by avoiding the fuel dispensing labor cost resulting from full service. Unless specified by the engine manufacturer, regular grade unleaded gasoline shall be used.

3.19 **Payment of Highway Tolls.** Procedures shall be established at each activity for the payment, or reimbursement of payments, for highway tolls. The head of the transportation division is responsible for ensuring the established control procedures are followed and, as a minimum, shall document the monetary value, date of issue, purpose, valid receipts, and the signature of the person payment was issued to for each transaction. The procedure must contain all required information for audit purposes.

3.20 **Fire Extinguishers on Transportation Equipment.** Fire extinguishers shall be installed on the following types of vehicles.

- Buses and ambulances.
- Vehicles regularly used to carry explosives, acids, compressed gases, fuel, or other hazardous/dangerous materials.
- All emergency vehicles, including police and patrol vehicles and structural and crash fire vehicles.
- Vehicles dispatched on trips where fire protection is not readily available; vehicles occasionally used to carry explosives and other dangerous articles; and vehicles hauling equipment/cargo covered with tarpaulin in the body of the truck are to be provided with fire extinguishers on an incidental basis, dependent upon the type of cargo and environmental conditions.
- In an emergency where it is considered essential that a fire extinguisher be temporarily installed in an automotive vehicle other than those listed in the preceding paragraph. The extinguisher is to be removed when the emergency has expired.

3.21 **Use and Installation of Seat Belts.** Policy and guidance pertaining to the use of seat belts in Navy motor vehicles (including tactical and combat vehicles not to adversely affect operation) are provided in OPNAVINST 5100.12. Installation of seat belts and vehicle modification shall meet Federal Motor Vehicle Safety Standards 208, 209, and 210 (49 CFR).

3.21.1 **Motor Vehicle Seat Belt Requirement.** Federal Motor Vehicle Safety Standard Number 208, Occupant Crash Protection, (49 CFR 571.208) requires the installation of occupant restraint systems for designated seating positions in all new vehicles manufactured for sale in the United States. The term "designated seating position" does not include auxiliary seats, such as jump seats.

a. Passenger Cars. Each new passenger car manufactured after January 1, 1968, must have a lap/shoulder belt at the driver's seat and at the right front passenger's seat and either a lap belt or a lap/shoulder belt at all other seats.

b. Trucks and Multipurpose Passenger Vehicles with a gross vehicle weight rating of 10,000 pounds or less. [A multipurpose passenger vehicle (MPV) is a motor vehicle with motor power designed to carry **16** persons (including the driver) or less which is constructed on a truck chassis, such as a van/carryall, or with special features for occasional off-road use.] Except for the vehicles listed below, each new light truck and MPV manufactured on or after January 1, 1976, must have a lap/shoulder belt at the driver's seat and at the right front passenger's seat and must have either a lap belt or a lap/shoulder belt at all other seats.

- Open-body type vehicles, such as a Jeep.
- Walk-in van-type trucks, such as the GMC step van.
- Convertibles.
- U.S. Postal Service vehicles.
- Vehicles with chassis-mounted campers.
- Motor homes.
- Forward control vehicles, such as Chrysler, GM, and Ford vans.

c. Trucks and Multipurpose Passenger Vehicles with a gross vehicle weight rating greater than 10,000 pounds.

(1) Each new heavy truck and MPV manufactured after July 1, 1971, must have either a lap belt or a lap/shoulder belt at all seats.

(2) Buses manufactured after July 1, 1971, must have either a lap belt or a lap/shoulder belt for the driver. No belts are required at other seating positions. (A bus is a vehicle specifically designed and manufactured to carry more than 16 seated occupants.)

d. Commercial vehicles of foreign manufacture purchased for use outside the United States, its territories and possessions, shall meet all applicable safety requirements of the country in which they are to be used.

### 3.21.2 **Special Requirements**

a. Individuals shall not ride in seating positions where safety belts have not been installed or are inoperative, except as specified herein.

b. Passengers (e.g. work crews) shall not ride in the cargo areas of motor vehicles except when the vehicle has been modified (e.g. side-facing seats) for such purposes in accordance with Federal Motor Vehicle Safety Standards (FMVSS) 208, 209, and 210. Seat belts that are installed on side-facing seats in accordance with Motor Vehicle Seat Belt Assembly Installations (SAE J800c), are not subject to the strength tests of FMVSS 207, paragraph S4.2 or FMVSS 210, paragraphs S4.2 and S5. If the vehicle is not equipped to carry passengers in a seated position with properly installed safety belts, then a second vehicle shall be requested to transport the work crew. However, per CNO message 171757Z of July 86:

"When operational requirements dictate, on a case by case basis, the commanding officer may authorize transportation of work crews in cargo vehicles providing the following criteria are met:

(1) The sides and the end must be enclosed with stakes measuring 36 inches from floor of the truck; and

(2) Transport only the number of workers required to do the job.

c. The driver or operator of any Navy motor vehicle is responsible for informing all passengers of safety belt requirements.

d. It is the responsibility of the senior occupant or rider of the vehicle to ensure compliance by all passengers with these requirements.

e. For NCFs and NOUs, in accordance with OPNAVINST 5100.12G, the use of tactical vehicles for transporting personnel is authorized within the unit's local area of operational responsibility after efforts to procure a safer means of transportation from organic assets has been exhausted. With the exception of organized convoys, passenger-carrying vehicles should be rented/leased when transporting personnel for distances greater than 50 miles or more than one hour in duration.



### **3.22 Installation and Use of Warning Lights and Sirens**

#### **3.22.1 Application**

a. **Warning Indicators.** Warning or right-of-way indicators are required in certain vehicle and equipment operations. The installation of warning lights and sound devices shall in all cases comply with local and state regulations and laws controlling the application of such devices. Normally, such devices are procured as original equipment by COMNAVFACENGCOM on certain special application vehicles and equipment. The requirement for and the installation of warning devices on vehicles and equipment not so equipped by COMNAVFACENGCOM shall be approved in writing by the Commanding Officer.

b. **Responding to Emergency Calls.** Military services police, fire, rescue vehicles and ambulances responding to emergency calls shall use sirens and emergency warning devices only in accordance with standard operating procedures as set forth in pertinent directives, local regulations, and civil laws of the locality in which the vehicle is operated. To ensure safe operation, regardless of permissible speed limits, vehicles shall be operated within the limits dictated by road or traffic conditions.

### **3.23 Radio-Dispatched Taxi and Material Transportation Systems**

3.23.1 **Radio-Dispatched Taxi Systems.** Each activity shall evaluate the benefits and costs of implementing a radio-dispatched taxi system. For example, if implementation of a radio-dispatched system substantially reduces Class B assignments, and at a lower cost, then it shall be implemented.

3.23.2 **Radio-Dispatched Material Transportation Systems.** The use of radio-dispatched trucks and vans to pick up and deliver material, parts, and supplies is usually feasible in industrial and congested areas. These systems have potential for reducing the number of vehicles, fuel consumption, and general costs by greater utilization. The general procedures that apply to radio-dispatched taxis also apply to material systems.

### **3.24 Vehicle Size, Weight, and Load Limitations**

3.24.1 **Highway Use.** It is the policy of the Navy to conform to state and local laws, regulations, and ordinances relating to motor vehicle weight and size limitations. Where interstate movements are involved, activity transportation directors or equivalents should ensure that they have a current vehicle size and weight limitation publication from state authorities of the states in which they plan oversize or overweight movements.

3.24.2 **State Laws.** State laws provide that no vehicle exceeding any legal limitation of weight or dimension may move over public highways unless the state(s) concerned grant prior permission for such movement. Limitations on the weight and dimensions of

vehicles are necessary to ensure safe passage over the roads and bridges and to prevent damage to highway facilities.

3.24.3 **Permits.** Vehicles exceeding the legal weight or size limitations shall not be moved over public highways by or for any agency of the Navy unless prior permission is granted by the state(s) concerned.

3.24.4 **Navy Representatives Authorized to Obtain Permits.** The activity Commanding Officer shall designate an activity representative (normally the Transportation Superintendent of the Public Works Department) to maintain liaison and direct communication with the authorized state representative for the purpose of obtaining permits for movement of overweight, oversize, or special military loads in vehicles owned, leased, or rented by the Navy. TEMC can assist where necessary.

a. The authorized representative of the activity shall, when contacting the state representative in regards to an oversize, overweight, or other special Navy vehicular movement, furnish the necessary information for a reasonable evaluation of the effects the movement shall have on the highway facilities involved. The information furnished shall include, but not be limited to the following:

(1) Type of equipment, with manufacturer's name if available, pertinent accessories, gross weight, axle or track loads, spacing, and the height, width, and length of the loaded or unloaded vehicle.

(2) The U.S. Navy identification number of the unit(s).

(3) Origin and destination of the movement.

(4) Proposed date and time of the movement.

(5) Nature of the cargo (within security limitation).

3.24.5 **Records.** Documentation of all negotiations with state representatives on movement permits shall be maintained in activity files.

3.24.6 **Truck, Truck Tractor, and Trailer Load Ratings**

a. **Gross Vehicle Weight Rating (GVWR).** Commercial trucks, including those procured by the Navy, are rated by the manufacturer by GVWR. The GVWR of a truck is the total weight of the loaded vehicle on the tires at ground contact. The GVWR is the sum of the weights of chassis, body, cab, accessories, equipment, tires, fuels, lubricants, coolants, driver (estimated at 175 pounds), and the payload.

b. **Curb Weight (CW).** The CW of a truck is the scale weight of the vehicle fully equipped, ready to operate, but without driver or payload. The CW includes the weights of chassis, body, cab, accessories, equipment, tires, fuels, lubricants, and coolants.

c. Payload (PL). The PL of a vehicle is the allowable rated load that a vehicle can transport. The PL is computed by subtracting the sum of the CW and the weight of the driver from the GVWR.

d. Gross Combination Weight Rating (GCWR). The GCWR rating of a tractor and trailer is the total weight of a fully loaded tractor-trailer unit on the tires at the ground. The GCWR includes the sum of the weights of the truck tractor chassis, cab, accessories, equipment (including fifth wheel), tires, fuels, lubricants, coolants, driver (175 pounds), with the semi trailer and its payload included. In the case of a truck in combination with a towed full trailer, the GCWR is the rated GVW of the truck plus the weight of the trailer and its payload.

3.24.7 **Payload Weight Distribution**. It is important that the PL weight be properly distributed over the body so that the percentage of weight carried by the front axle and that carried by the rear axle shall be in the ratio for which the vehicle was designed. See manufacturer's recommendations for loading. Refer also to the Navy Driver's Handbook for general guidance.

### 3.25 **Operation of Construction and Weight Handling Equipment**

3.25.1 **Equipment Management**. Sustained productive use of assigned construction and weight handling equipment is necessary to justify continued retention and ownership. Satisfactory productivity of an equipment fleet is principally achieved as a result of organized action directly controlled by technically competent and informed supervision. The details and forms of management control of an equipment fleet and its operating personnel are not specified herein because of the varied conditions and types of maintenance and construction work performed throughout the Navy. It is the basic responsibility of each transportation division to have equipment available, and to assign equipment and operating personnel to accomplish job performance.

3.25.2 **Work Plan**. The work plan must be based on the priority and type of work to be accomplished. Initial and continuing surveys by management are necessary to determine foreseeable equipment needs. A useful planning tool for this purpose is a graphic chart of projected work adjusted each month to show the probable work demands over the next three months. It is expected that long-range projects and work of a recurring nature will constitute most of the projected work. Scheduling equipment and operator requirements must be closely coordinated between the transportation and other departments concerned with work accomplishment. Equipment and operators must be available to respond to emergency situations.

3.25.3 **Equipment and Personnel**. Obtaining and furnishing the proper equipment and qualified personnel to accomplish the workload is a basic function of the transportation department. Knowing the location, availability, and suitability of these resources is a practical and continuing requirement. Such information can be displayed visually on a control board or similar device. The following items are related to this control technique:

- a. Inventories of equipment reflected by up-to-date record cards.
- b. Properly marked and identified equipment.
- c. Locator devices for personnel and equipment.
- d. Direct and rapid means of communication, responsive to the nature of the workload.

3.25.4 **Work Generation**. The daily requirement for construction and weight handling equipment man-hours and equipment-hours of service are generated by the needs of various organizational elements of each naval activity. A current list of organizational representatives authorized to request work involving the use of equipment shall be available to those who authorize or supervise equipment operations. The procedure for requesting services and channeling such requests shall be clearly written and made available to all personnel concerned. This procedure shall be specific and concise for both routine and emergency situations.

3.25.5 **Work Requests**. Requests for work must be exact and complete. If the work is well defined, a measure of control and planning assistance is provided by outlining the time dimensions, and extent of each job. Problems related to the definition of the work shall be clarified with the responsible customer prior to work authorization. A visit to the specific job site may also be warranted. A test of the clarity and usefulness of a work request is whether an equipment supervisor can use its contents, without other explanation, to plan and perform the required service.

3.25.6 **Work Classification**. The work of the equipment fleet is, in most cases, related directly to the needs of organizational elements of the naval activity or supported activities involving operations, production, supply, ordnance, public works, and similar functions. The nature of the work of these organizational elements is predominantly routine, scheduled, and orderly. There is no reason why the same emphasis on routine, scheduled, and orderly work cannot be reflected by the equipment fleet management serving these elements. The three appropriate classifications of work to be accomplished by the construction and weight handling equipment fleet can be described as "scheduled jobs," "immediate unscheduled jobs," and "deferrable unscheduled work."

a. **Scheduled Jobs**. If the priority of authorized work is not classified and handled as "scheduled jobs," intelligent planning and effective control of the equipment operating force is made more difficult. Although most construction and weight handling equipment is mobile or portable, its uncoordinated shifting from one job site to another on an unscheduled basis is costly and wasteful. The application of priorities to scheduled jobs is necessary. Often equipment supervisors prefer to arrange for the order and the time in which jobs should be done to conform to the best interests of their own organization and the environmental factors at the job site. Although this viewpoint

is understandable, the needs and related commitments and schedules of the requesting group shall temper it. A complex system of priorities is discouraged.

b. Immediate Unscheduled Jobs. Management must expect the occurrence of unforeseen situations, including some of an emergency nature. These situations may require immediate and perhaps around-the-clock use of one or several units of the equipment fleet for a short period of time. The classification of "immediate unscheduled jobs" shall apply only to unforeseen and unscheduled jobs requiring immediate performance and not likely to continue for a prolonged period. If such continuance is indicated the jobs can be included with the "scheduled jobs" and designated as such. Management must be experienced with the role of construction and weight handling equipment and operators in emergency and contingency plans and be prepared to commit them on an "immediate unscheduled" basis.

c. Deferrable Unscheduled Work. Special circumstances may temporarily defer essential work. Temporary lack of funds, unavailability of equipment or operators, and unfavorable environmental conditions are typical causes of deferment. Essential work shall not be deferred indefinitely. The circumstances dictating deferment shall be reviewed periodically to determine whether they are still valid. Deferrable unscheduled work shall not be confused or identified with the normal backlog of scheduled jobs not started, or with scheduled jobs where progress has been stopped temporarily.

3.25.7 Job Authorization. The concept of action through the chain of command applies particularly to job authorization. Written delegation of authority (whereby supervisory personnel are authorized to approve jobs involving construction and weight handling equipment and operators) shall be a matter of record. The authorizing signature on a job order or movement order means the signer is authorized to commit the resources, is fully informed on all aspects of the job, and has approved the actions ordered. No job shall be performed without proper authorization. When circumstances require verbal authorization, written confirmation shall immediately follow.

3.25.8 Job Planning. The job plan is the framework for placement, operation, flow, support, and interaction of the equipment. A job plan must be well thought out to avoid confusion and delay and shall be structured to conserve material, time, and money. Some of the elements of a job plan are as follows:

- a. Exact specifications of the work to be done. A job order attached to the job plan shall suffice if the job order is sufficiently detailed and complete.
- b. Sequence of all job phases.
- c. Scheduled completion time for each phase and the overall job.
- d. Equipment requirements for each phase, which can be best obtained through consultation with the transportation supervisor or his/her designated representative.

- e. Personnel requirements and estimated man-hours for each phase.
- f. Material requirements and estimated cost for each phase.
- g. Clearance permits, special licenses, and similar items pertinent to the job.
- h. Environmental conditions such as climate, wind, terrain, drainage, soil mechanics, visibility, access roads, unusual hazards, and similar items.
- i. A record of progress when units of equipment operate individually to perform routine or repetitive tasks can render a job plan unnecessary. In such cases, the job order authorizing and defining the work can be considered the job plan for that operation.

3.25.9 **Job Supervision.** There is no substitute for competent supervision. This is especially true when field supervisors know the job plan and are technically competent to direct its accomplishment as smoothly and safely as the resources under their control permit. This on-the-scene level of management control does not relieve the operators and operating crews of their specific responsibilities. It does provide a more assured working climate and an accepted point of referral for needed decisions beyond those required by operators and work crews. The supervisor in the field may be considered the focus around which otherwise independent equipment units and operators unite to form an operating team. As an aid to job supervision and management control, each activity is required to keep a record of starting and stopping time for each job; including travel time, idle time, downtime, and fuel consumption for each unit of equipment.

#### 3.25.10 **Equipment Selection and Application**

a. **Importance of Proper Equipment Selection.** The ideal basis for equipment selection and application is to acquire the most suitable equipment to accomplish each job undertaken. Economic restrictions on this ideal line of action, however, must be recognized. The high acquisition cost of construction and weight handling equipment, and the different types and conditions of work to be accomplished, inhibit the use of the most suitable equipment for every job. Nevertheless, it is not economically sound to undertake jobs without reasonably suitable equipment. Commercial contracting firms, for example, seek jobs that can be handled effectively with their on-hand equipment inventory. Such an option is not open to naval activities which must perform their tasks without the privilege of accepting or rejecting the assignments. As a result, selection of the basic equipment fleet for naval activities must be made on a sound basis with regard for overall utility, flexibility, and cost. Another option available is short term rental or leasing of equipment for specific work and time frames.

b. **Criteria for Equipment Selection.** The essential considerations for justifying the acquisition of construction and weight handling equipment on a regularly assigned basis are as follows:

(1) Predictable continuing requirements must exist over a considerable period of time for stated quantities of specific types and capacities of the equipment.

(2) The continuing requirements cannot be satisfactorily and economically supplied by suitable loaned, rented, or leased items.

(3) The equipment acquired shall efficiently perform various recurring jobs of primary importance to the activity, through the quantity, types, capacities, and attachments of the acquired units. It is of secondary importance that this equipment has the flexibility to satisfactorily perform other jobs of a nonrecurring nature.

c. Application Criteria for Specific Jobs. The process of selection requires a knowledge of the characteristic advantages and disadvantages of equipment units and attachments, the nature of the jobs they were designed to perform, and the proper size and capacity of the equipment. Compromises can be expected because of the several factors involved. The overall utility and flexibility of construction and weight handling equipment, however, can be increased by the inclusion of proper attachments and effective work procedures. Consideration shall be given to the use of general purpose equipment of the most versatile, multi-use type available. As an example, a tractor with front-end loader, back-hoe, auger, and trencher attachments offers maximum use of the power unit which is the primary cost factor in the procurement. Generally, the following apply to application criteria: functional characteristics of equipment and attachments; applicability to workload; size and capacity of equipment for job performance; cost, and standardization.

### **3.26 Accident Reporting and Traffic Safety Program**

a. DoD policy, as set forth in DoD Instruction 6055.4 (Department of Defense Traffic Safety Program), requires each DoD component to establish and maintain comprehensive traffic safety programs. DoD Instruction 6055.7 (Mishap Investigation, Reporting and Record Keeping) requires each accident involving a DoD motor vehicle to be investigated.

b. The Navy Traffic Safety Program, promulgated by OPNAVINST 5100.12, requires all accidents/mishaps involving Navy vehicles/automotive equipment to be reported in accordance with OPNAVINST 5102.1.

c. All vehicles shall contain a DD Form 518 (Accident-Identification Card) and all drivers involved in accidents shall complete a DD Form 518 and SF 91 (Motor Vehicle Accident Report), including copies of local area reporting procedures.

d. Naval activities shall develop safety and accident prevention programs for the safe operation of DoD motor vehicles which shall also include provisions for mandatory use of seat belts (OPNAVINST 5100.12) and a prohibition against the use of tobacco products in all government owned or operated vehicles (OPNAVINST 6100.2).

e. A Traffic Safety Council shall be established at each naval activity (OPNAVINST 5100.12). Membership of the council shall include representation from all major commands located at these stations.

f. See OPNAVINST 5100.12, paragraph 7c for restrictions pertaining to Navy vehicles operated during peacetime conditions by on-duty full time motor vehicle operators, including those carrying explosives or hazardous cargo.

g. Wearing portable headphones, earphones, or other listening devices while operating a motor vehicle is prohibited (OPNAVINST 5100.12).

h. The Federal Register, Volume 67, Number 41 provides guidance to federal agencies regarding the use of hand-held wireless phones while driving navy-owned or leased vehicles. It states that agencies should provide portable hands-free accessories and/or a hands-free car kit for government-owned wireless phones. It also emphasizes educating employees on safe driving while using hands-free wireless phones, and to be especially aware of local civil restrictions regarding the use of cellular phones when operating a vehicle off base. The OPNAVINST 5100.12G further addresses these devices and recommends their use only when a vehicle is stopped and the phone can be used without endangering lives including the operator; where applicable, ask the passenger to operate the equipment. It is also recommended that (1) phones should be switched off at gas stations, and (2) If not able to switch off, then leave in the car and let the caller leave a message.



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## CHAPTER 4. MAINTENANCE

### SECTION 1. SHORE MAINTENANCE MANAGEMENT

*This section pertains to shore activities' CESE maintenance management. Units assigned to the Naval Construction Force (NCF) or designated as Special Operating Units (SOU) should refer to Section 2 for guidance on maintenance management.*

4-1.1 **Basic Maintenance Objectives.** The basic objectives of the Transportation Maintenance Management Program are to provide at the lowest possible cost:

- a. Maximum availability of safe and reliable equipment.
- b. Maximum economic service life of assigned equipment.

4-1.2 **Program Elements.** To accomplish the basic maintenance objectives efficiently and effectively, the application of management principles, procedures, and techniques for maintenance planning, organization, direction, coordination, control, and evaluation have been incorporated into the Transportation Maintenance Management Program. These have been included in the following basic program elements, which are provided in this section.

- a. **Planning and Scheduling.** Provides for the establishment of a complete and accurate inventory of the equipment to be maintained; an inspection and preventive maintenance schedule that shall ensure safe, serviceable equipment, and a uniform shop workload.
- b. **Organization and Facilities.** Establishes the necessary organizational structure to ensure efficient accomplishment of the maintenance workload through proper direction, supervision, environment, and control of the work force.
- c. **Coordination.** Provides for the necessary coordination with the supply and fiscal organizations for material support and accounting service, and with other organizations for coordination support.
- d. **Control.** Provides procedures and standards for the control of work input, direct labor productivity, overhead, material, downtime, and overall maintenance cost.
- e. **Reports and Performance Evaluation.** Provides a uniform system of cost and statistical accounting, together with management indices to evaluate all phases of the program in sufficient detail to determine those elements needing corrective action, and provides a data base for transportation maintenance budget projections.

#### 4-1.3 **Levels of Maintenance**

It is the policy of the Navy to require efficient and uniform maintenance management policies, procedures, plans, and programs. COMNAVFACENGCOM administers a Service Life Extension Program (SLEP) for various items of high cost equipment. The purpose of this program is to perform a complete rebuild of selected items that will significantly extend the useful life of this equipment. Repairs at this level are normally accomplished by contract or at designated facilities under the control of the TEMC. The program does not support Navy Working Capital Funded activities.

4-1.4 **Commercial Contract Maintenance.** Current policy is to provide CESE maintenance services using the most cost-effective means available. The use of commercial contracts is encouraged where it can be proven to be the best course of action. Historically, activities have used commercial contracts to accomplish repair or rebuild of various components, for example engines, transmission, cooling systems, etc. This practice should be continued.

4-1.5 **Maintenance at Small Activities.** Where possible, small activities shall obtain maintenance services from the host Public Works Lead Activity, another Government activity or a commercial contractor. The using activity is responsible for funding all maintenance. Where maintenance is of a recurring nature, interservice/intraservice support agreements should be established with the performing Government activity. Where the activity cannot obtain maintenance from a Government activity, or service is not responsive, the procedure should be to procure services from commercial sources.

#### 4-1.6 **Maintenance Organization and Staffing**

a. **Standard Organization.** Effective maintenance at an activity requires an organizational structure with duties, responsibilities, and authority clearly defined. Supervision can then effectively direct and control the accomplishment of work. In addition, the organization must be staffed and provided with facilities and resources required to perform in the most cost effective manner. The general organization and functions of the Transportation Division, including the Operations and Equipment Maintenance Branches, are described in paragraphs 2.15 through 2.15.2. A detailed description of the Equipment Maintenance Branch follows.

b. **Equipment Maintenance Branch.** The Equipment Maintenance Branch Head reports to the Transportation Division Director. Briefly, the Branch Head's responsibility is to ensure all vehicles and equipment are maintained in a safe and reliable condition, and the time during which vehicles and equipment are out of service (downtime) is kept to a minimum. Further responsibility is to ensure maintenance is performed in a cost-effective manner, and the cost of such maintenance is accomplished within the Transportation Division's budget plan. The Maintenance Branch is organized into a work input and records section and one or more repair sections. Each section head reports to the Maintenance Branch Head. Functional responsibilities of these sections are:

(1) Work Input and Records Section

(a) Maintains the inventory, schedules maintenance, receives all equipment, makes basic repair descriptions on Shop Repair Orders (SROs) and routes all maintenance work and SROs to the repair section supervisor(s) for work accomplishment.

(b) Meets with the customer to identify complaints, performs simple safety inspections, and describes in writing on the SRO the work to be accomplished.

(c) Allocates on an SRO the job operation time standards (flat rate) to be used in measuring the repair section's productivity.

(d) Performs all shop accounting functions, including completion of labor distribution cards' reconciliation with time cards.

(e) Maintains all equipment history record files.

(f) Provides the Equipment Maintenance Branch Head with status reports such as downtime status, labor expended against standards, productivity of the repair section(s), and performance against maintenance input and overhead standards.

(g) Develops, revises, and adjusts all preventive maintenance schedules, including items to be inspected, frequency, and necessary depth and detail.

(h) Expedites work through the shop(s), including parts for vehicles out of service awaiting parts (OSP).

(i) Advises customers when work has been accomplished, and provides necessary status information.

(2) Repair Section(s)

(a) Performs work described on SROs. Brings to the supervisor's attention, for further work authorization, added deficiencies requiring correction disclosed during accomplishment of work.

(b) Accomplishes work on SROs within established job operation time standards (flat rate).

(c) Keeps overhead and indirect time at a minimum, allocating such time within established standards.

(d) Restricts the use of repair parts to a level necessary to achieve effective repairs, holding material costs within overall established budget standards.

(e) Performs final inspection and testing to ensure that the work has been properly accomplished and that the equipment is safe and reliable.

c. Staffing. Staffing requirements can be determined from the maintenance man-hour input standards set forth in Appendix G. These factors, applied to the miles or hours operated by the activity can be used to develop the required staffing needed to maintain the vehicle and equipment in a safe and serviceable condition. Applying labor rates and material cost factors to these man-hours can develop funding requirements.

#### 4-1.7 **Maintenance Coordination**

a. Coordination Requirement. Management attention and action must be constantly directed to the important function of coordination, both within the Transportation Division and Public Works Department and with other departments within the activity. A failure of proper coordination can result in a serious breakdown in the effectiveness of the maintenance program and result in excessive costs.

b. Supply and Comptroller Department Coordination. The Supply and Comptroller Departments provide material support and cost accounting services to the Transportation Division. Paragraph 4-1.9.4 describes in detail the necessary coordination in the area of repair parts support. NAVSO P-1000-3 presents the responsibilities of the Supply and Comptroller Departments with respect to cost accounting and report preparation. The Transportation Division Director shall be completely familiar with NAVSO P-1000-3 and maintain necessary liaison with the Supply and Comptroller Departments to ensure accurate and timely data and reports. In addition, the Transportation Division Director shall review the operation of the service stations if operated by the Supply Department to ensure that the service stations are performing certain preventive maintenance functions correctly.

c. Operations Branch and Other Using Departments. Proper preventive maintenance and efficient shop loading programs require maintenance schedules be met. However, such schedules must be compatible with the equipment requirements of the Operations Branch and other using organizations. The Transportation Division Director shall ensure the schedules are realistic and coordinate them through the using organizations. Schedules shall be flexible to the extent that operational requirements are met.

#### 4-1.8 **Maintenance Planning**

a. Requirement. Effective and economic preventive maintenance services require a systematic scheduling program that shall make equipment available for mechanical and safety inspections, lubrications, adjustments, and necessary repairs at predetermined intervals. Thus, downtime is reduced as well as the resultant costly disruptions of transportation operations work schedules because of equipment failures. In addition, effective planning and scheduling shall ensure that the major portion of the shop workload shall be uniform and balanced, reducing the required work force and increasing the application of the work force to productive effort. It should be recognized that there is an economical point at which the random failure of equipment can be reduced by preventive maintenance.

b. **Management Action.** The Transportation Division Director shall review actual performance against planned schedules and take appropriate corrective action in the following cases:

(1) Where actual miles or hours between inspections indicate equipment is being inspected or serviced too frequently or not frequently enough, resulting in over or under maintenance.

(2) Where analysis of unscheduled work indicates faulty inspection or driver abuse.

(3) Where activities are not turning in vehicles for inspection and service on scheduled dates.

4-1.8.1 **General Plan.** The basic policies and procedures for the financial management of the Navy are prescribed by the Comptroller of the Navy and set forth in NAVSO P-3006, Financial Management of Resources. This system is designed to provide the department heads of activities and their subordinates with the basic information necessary to develop an operating plan (including a transportation plan), which shall efficiently manage the O&M,N resources made available. Effective transportation management depends on the development, approval, and execution of a realistic and cost effective budget plan. In order to execute such a plan, all levels of management require timely and frequent feedback reports on the basic elements of transportation maintenance and operations, such as:

- a. IO to inventory balance;
- b. Equipment downtime;
- c. Equipment utilization;
- d. Maintenance man-hour input;
- e. Direct labor productivity;
- f. Indirect labor (overhead);
- g. Repair parts and material expenditures.

The foregoing elements must be monitored constantly to ensure that the budget plan is being followed and the mission of providing safe, reliable, and efficient transportation support services is being accomplished.

4-1.8.2 **Budget Plan.** Each transportation director shall be responsible for developing the Transportation portion of the activity budget. Appendix G provides guidance on a uniform system for the preparation of a transportation maintenance direct and indirect

labor and material budget. Figure G-1, Appendix G, is a sample worksheet, which should be used in preparation of the budget plan. Preparation of the operations portion of the plan should be based on historical data and projected operational requirements. The standards presented in Appendix G, Table G-1, provide the direct labor necessary to maintain units in a safe and reliable condition throughout their economic service life. These standards include the necessary labor hours to lubricate, service, clean, wash, install tires and batteries, remove, repair, and replace major/minor components, subassemblies, parts, and accessories, except accidents. The standards do not cover extensive one-time major repair or overhaul of a complete unit of equipment.

**4-1.8.3 Transportation Reports.** The primary formal information systems available to transportation management are the NAVCOMPT Form 2168, Operating Budget/Expense Report (Figure 4-1-1) and the NAVCOMPT Form 2169, Performance Statement (Figure 4-1-2). These or other similar reports should be provided monthly by the activity comptroller/fiscal officer from the activity accounting system as required by NAVSO P-3006. Essential information provided by these reports is as follows.

**4-1.8.4 Evaluation of Reports**

a. Operating Budget/Expense Report, (NAVCOMPT Form 2168). The NAVCOMPT Form 2168 provides management with details as to work units completed, man-hours, and accrued expenses, cumulative-to-date by cost account code. Using the monthly NAVCOMPT Form 2168 and records maintained by the activity transportation organization, i.e., IO, inventory, work units, downtime, etc., an analysis can be made to determine if the transportation organization is meeting the plan and what elements may be causing a deviation from the approved budget plan. A suggested budget-troubleshooting chart (Figure 4-1-3) is provided to aid the transportation director in analyzing the budget performance.

b. Performance Statement, (NAVCOMPT Form 2169). The NAVCOMPT Form 2169 (Figure 4-1-2) is designed to provide management with the actual fiscal year to date totals for accrued expenses and work units, compared with the approved annual operating budget for each cost account code. In theory, a uniform expenditure rate is about 8.3 percent per month. While the actual expenditures for individual cost accounts may vary from the uniform rate, the transportation director should analyze the significance of any variance from the uniform rate and take timely corrective action. Similarly, the report provides the number of work units performed for each cost account code and the to-date percentage of the planned work units related to the budget. For example, in theory if 8.3 percent of funds for maintenance were expended in the first month, then in theory 8.3 percent of the planned work units (miles/hours) should also have been accomplished, since this was the basis of the budget amount.

## OPERATING BUDGET/EXPENSE REPORT

From			To	Budget Detail      Update Plan		Report Detail   X Monthly Summary		For Period Ending 30 Oct _____				
Budget for				Budget Grantor		Appropriation Data		Cost Center Transportation			Reporting Fiscal Officer (Signature, rank & date submission)	
func/ sub- fund	cost acctn	Equip Cost Code	Description	Wor k Units (4)	Man-hours		Cumulative Expenses					
					Militar y (5)	Civilia n (6)	Military Service s (7)	Civilia n Labor (8)	Material & Supplies (9)	Commerci al Contracts (10)	Othe r (11)	Total Expenses (12)
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
L-7	62A2	0102	Sedan	2		4.8		44	31	25		100
	62A3	0103	Sedan	1		2.4		26	16			42
Total	62A0			3		7.2		70	47	25		142
	62B0	0061	Bus 20 pass	3		21.0		194	136			330
	62B0	0063	Bus 37 pass	4		28.0		259	182			441
Total	62B0			7		49.0		453	318			771
L-7	62E0	0200	Station Wagon	2		4.8		44	31			75
	62E0	0202	Station Wagon	1		2.4		26	16			42
	62E0	0210	Station Wagon	3		7.2		67	47			114
Total	62E0			6		14.4		137	94			231
L-7	62F0	0205	Ambulance conv 4x2	1		5.9		55	85			
Total	62F0			1		5.9		55	85			140
	62G0	0313	Trk. Pickup 4x2	15		42.0		388	273	20		681
	62G0	0316	Trk. Pickup 4x4	10		28.0		259	182			441
	62G0	0319	Trk. Pickup compact	5		14.0		129	91	15		235
Total	62G0			30		84.0		776	546	35		1,357
L-7	62H0	0308	Trk. utility comm. 4x2	2		7.0		65	45			110
	62H0	0311	Trk. Carryall 8 pass.	3		10.5		97	68			165
	62H0	0315	Trk. Multistop 4x2	5		17.5		162	114			276
Total	62H0			10		35.0		324	227			551
	62I0	0341	Trk. Panel 4x2	3		13.2		122	86			208
	62I0	0342	Trk. Cargo pickup 4x2	2		8.8		81	57			138
	62I0	0343	Trk. Cargo stake 4x2	4		17.6		163	114			277
Total	62I0					39.6		366	257			623

Figure 4-1-1.



### **Sample Quarterly Performance Statement**

From Comptroller Department			To Public Works Department		Appropriation Data			For Period Ending		
								Reporting Fiscal Officer (Signature & rank) John J. Doe CDR.		
Budget for			Budget Grantor		Cost Center			Date of Submission 15 October 1999		
BUDGET CLASSIFICATION			EXPENSES			WORK UNITS				
func / sub- func	cost acctn	Description	Actual	Annual Budget	Norm 8.3% % to Budget	Actual	Annual Budget	Norm 8.3% % to Budget	Annual cost per unit	Standard cost per unit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	62A0	Maint Sedans	1,092	3,900	28	26,000	130,000	20	.042	.0300
	62G0	Maint Pickup Trucks	7,656	30,625	25	227,500	875,000	26	.0337	.0350
	64S0	Maint Const Equip	8,550	25,800	30	3,898	12,575	31	2.193	2.266
	64Y0	Maint Weight Hand	8,580	42,900	20	975	3,900	25	8.800	11.000
	63A0	Operation Sedan	7,80	3,900	20	1,733	8,666	20		
	63G0	Operation Pickup	10,226	39,330	26	22,724	87,400	26		
	67I0	Drivers/Chauffeur	77,000	308,000	25					
	69I0	Supervision	10,557	47,988	22					

Figure 4-1-2.

### **Budget Troubleshooting Chart**

ISSUE	YES	NO
DID I MEET BUDGET	STOP	REVIEW WORK UNITS, LABOR, MATERIAL, AND OTHER EXPENSES
DID I MEET WORK UNITS	STOP	LOCATE EXCESSIVE UNITS; COMPARE BUDGET TO ACTUAL
DID I MEET LABOR	STOP	REVIEW STANDARDS; LOCATE EXCESSIVE MAN-HOURS; COMPARE BUDGET TO ACTUAL
DID I MEET LABOR	STOP	REVIEW OVERHEAD; LOCATE EXCESSIVE MAN-HOURS; REVIEW PROCEDURES OR METHOD
DID I MEET MATERIAL	STOP	LOCATE EXCESSIVE COSTS OR PROCEDURES; COMPARE BUDGET TO ACTUAL
DID I MEET OTHER EXPENSES	STOP	LOCATE EXCESSIVE COSTS OR PROCEDURES; REVIEW CONTRACTS FOR OTHER COSTS

Figure 4-1-3.

4-1.8.5 **Inventory Objective (IO) Control.** Control of inventory to IO is necessary if the transportation director is to function within the operating plan and established standards. Since the approved equipment IO is the basis for the transportation budget, every effort must be taken to remove equipment from service within 15 days after replacement equipment is received. Equipment such as forklifts and special purpose equipment will also have an impact on budgetary requirements.

4-1.8.6 **Equipment Downtime.** Transportation equipment downtime is based on a 24-hour day, 365-day year, which equates to 8,760 hours per year. The maximum allowable standard downtime is 10 percent of the total available hours, with no more than 10 percent of out of service at any given time. Downtime hours shall begin when the vehicle/equipment is removed from service and end when the user is notified that the vehicle/equipment is ready to return to service. An Out of Service Analysis form, such as that illustrated below can be used by the maintenance manager on a daily basis to monitor the status of equipment out of service.

Automotive (A-N)	Quantity	Inv	% of Inventory
Inventory		243	
<b>Out of service</b>			
Waiting (OSW)	7		2.9
Maintenance	2		0.8
Parts	16		6.6
Total out of service	25		10.3

4-1.8.7 **Maintenance Man-Hour Input.** Maintenance man-hour input standards listed in Appendix G are the basic elements used by management in determining O&M,N funding and staffing requirements for the maintenance of CESE. It is therefore essential that the Transportation Division Director, through Maintenance Branch Head and inspectors, control the amount of maintenance man-hours authorized for accomplishment of SROs. An analysis in the format suggested in Figure 4-1-4 can be compiled on a monthly basis (by data processing or manually) which shall provide the budgeted/standard maintenance man-hour versus actual expended man-hours to date. This simple analysis shall alert management if the expenditure of maintenance man-hours is not being controlled within the budget plan. Activities that prepare the transportation budget in accordance with the guidelines contained in Appendix G shall have the total annual budgeted/standard maintenance man-hours projected for each cost account already computed. Other activities should follow the guidelines contained in paragraph 2.c of Appendix G in computing the total annual standard maintenance man-hours for each cost account. The Operating Budget/Expense Report, NAVCOMPT Form 2168, or similar tabulated report, shall provide the actual direct labor man-hours expended for each cost account. The percentage of the budgeted or standard maintenance man-hours direct labor should not exceed 8.3 percent per month.

# **SAMPLE MAINTENANCE MAN-HOUR INPUT AND SHOP PRODUCTIVITY ANALYSIS**

Period 30 October 2000

Equip. Code	Cost Account Number	Annual Budgeted Man-Hours	Applied Standard Man-Hours	Actual Man-Hours Expended To Date	Percentage of Budgeted Hours (Col 5 / Col 3 x 100)	Percent of Productivity (Col 4 / Col 5 x 100)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0102	62A2	576	43	56	9.7	76.7
0103	62A3	192	14	21	10.9	66.7
0104	62A4	480	32	46	9.6	69.6
0200	62E0	576	40	37	6.4	108.1
0202	62E0	288	24	20	6.9	120
Sub Total	62E0	864	64	57	6.6	112.2
0311	63H0	840	70	70	8.3	100
0313	62G0	672	56	52	7.7	107.6
0319	62G0	336	28	34	10.1	82.4
Sub Total	62G0	1.006	84	86	8.5	97.6
0441	62J0	1.152	80	90	7.8	88.8
0580	62M0	331	20	18	5.4	111.1
Total	A-N	5.443	412	444	8.1	92.7
0325	6420	175	14	14	8.0	100
0880	64P0	8	6	1	12.5	600
0756	64Q0	46	4	6	13.0	66.7
0887	64Q0	4	0	0	0	0
0891	64Q0	14	2	3	21.4	66.7
Sub Total	64Q0	247	20.6	24	9.7	85.8

Figure 4-1-4.

4-1.8.8 **Direct Labor Productivity.** Direct labor hours expended for the month are shown on the NAVCOMPT Form 2168; however, there are no provisions for containing standard (flat rate) hours. A work center productivity record showing standard flat rate hours should be maintained at the shop level. A Vehicle/Equipment Direct Labor Productivity and Downtime Record, prepared on a weekly basis, shall provide the Maintenance Branch Head with timely, concise information for analyzing the overall performance of each work center, highlighting areas requiring attention. The form should include the following information: USN, SRO number, job order number, date and time in and out, action date, start and stop time, SRO labor hours (standard and actual), and downtime hours (OSW, OSM, OSP, and total). The information for the report should be compiled daily and the direct labor data can be taken from the labor record maintained on each SRO. This form, if used, should be originated in conjunction with and attached to the copy of the SRO maintained by the cost clerk for posting of actual hours expended on each job.

4-1.8.9 **Indirect Labor (Overhead).** Indirect maintenance labor (overhead) is reported on NAVCOMPT Form 2168 under Cost Account Codes (CACs) 6910 and 6950, and summarized under CAC 6900. CAC 6910 represents labor and material expenses incurred by personnel performing indirect duties or services relating to functions in the transportation maintenance shop. CAC 6950 represents costs incurred for allowed time, standby time, training, safety meetings, and tardiness. It is the responsibility of the Transportation Division Directors to ensure that the total overhead hours under CAC 6900 do not exceed 32 percent of the direct productive standard hours for the Maintenance Branch. The formula for computing maintenance overhead is provided in paragraph 2.f., of Appendix G.

4-1.8.10 **Material Management.** The Transportation Division Director, through the Maintenance Branch Head and section supervisors, must exercise control over expenditures for parts and materials to ensure they do not exceed the planned budget figure. The budget for parts and materials is normally based on an average parts and materials cost per standard labor hour (Appendix G). Management should use the monthly NAVCOMPT 2168 to review parts and materials expenditures. As a customer of the Supply Department, transportation management should expect and receive a complete, current, updated material status report reflecting the status of all outstanding requisitions on active/open SROs. The Maintenance Branch Head shall establish a simple system for recording all outstanding requisitions and arrange with the Supply Department an agreeable follow-up time frame. The system developed should be structured to allow for comparison with reports provided by the Supply Department.

4-1.8.11 **Maintenance Evaluation and Quality Control.** The control of the quality of maintenance performed by the shop forces is exercised by the Maintenance Branch Head through section supervisors. The section supervisors are responsible for checking the work of each mechanic through the various stages of repair and at completion. Work completed to the supervisor's satisfaction shall be attested to by his signature on the SRO. The Transportation Division Director, accompanied by the

Maintenance Branch Head, shall make unannounced audits, at least quarterly, following the procedures set forth below:

- a. Randomly select SROs on work in progress and awaiting shop, inspecting equipment to ensure repair requirements are properly identified.
- b. Review findings immediately with the original inspector (over/under maintenance) (clear descriptive entries on SRO).
- c. Review standard time authorized by checking the flat rate manuals.
- d. Take random sampling of SROs, check for repeat work.
- e. Take corrective action as appropriate.

Findings of the audit should be documented and retained for record purposes. Problem areas should be discussed with the appropriate levels of management to provide corrective action.

4-1.8.12 **Equipment History Record Requirements.** The Transportation Division Director is responsible to ensure that individual equipment history record files are established for each unit of CESE assigned to the activity. This record file shall be maintained in complete and up-to-date status from the time the equipment is acquired until it is transferred for disposal or excess. History record files may be maintained in hard copy and/or computer media. History record files shall accompany vehicles transferred from one activity to another. As a minimum, the equipment history record files shall contain the following:

- a. Certificate of origin (or vehicle title/ownership certificate).
- b. DoD Property Record Form DD 1342 or other computer generated form.
- c. SROs covering all inspection, maintenance, and repair items accomplished to date (government or contractor work).
- d. Current annual safety inspection.
- e. Accident reports.
- f. Manufacturer recalls or notices.
- g. Copies of any applicable quality deficiency reports (QDRs).
- h. Copies of any vehicle modification requests or work completed.
- i. Other appropriate documentation considered necessary for further reference purposes, such as warranty work and unsatisfactory equipment reports.

4-1.8.13 **Federal Automated Statistical Tool (FAST)**. The Transportation Cost Report and the Transportation Equipment Management Evaluation Summary have been replaced with FAST. This is an automated reporting system developed to assist fleets in meeting the mandated data reporting requirements of Executive Order 13149, EPACT, and the SF-82. The FAST data is reported annually to GSA via the TEMC. Once the data call is made in October of each year, the TEMC works directly with activity personnel to ensure accurate electronic data is submitted in the format reflected in the FAST data system. The report contains three sections: inventory, cost and mileage data and fuel consumption by type. Each of these sections is broken down further into subsections and reflects the actual data that must be submitted. The official website for the program is <http://fastweb.inel.gov/>. Coordination with the TEMC is required to gain password access to the FAST system.

#### 4-1.9 **Maintenance Scheduling**

4-1.9.1 **Scheduling and Shop Control**. An effective and efficient maintenance program requires the establishment and upkeep of a preventive maintenance scheduling system and a sound shop control procedure. Vehicles and equipment shall be scheduled for inspection and servicing in accordance with the time, mileage, and operating hours prescribed in paragraph 4-1.10.4. As a minimum, the schedule shall ensure that each vehicle is inspected for safety in accordance with paragraph 4-1.10.4.a at least every 12 months or 12,000 miles, whichever occurs first. The schedule can be formulated by determining each vehicle's estimated annual miles, then divide by the manufacturer's recommended service interval. This shall determine the number of service intervals per year for each vehicle. Dividing the number of working days per year (250) by the number of service intervals per year shall develop the number of working days between each inspection or the designated inspection group for each vehicle. From this determination a schedule can be established providing a quota of vehicles for inspection daily that shall provide a balanced shop workload. An electronic record should be used to track service intervals and service performed. The record should include: USN, EC, make, model, year, estimated annual miles/hours; and columns for type of service, date, cumulative mileage or hours, miles or hours of operation, and miles or hours operated or a specified interval.

4-1.9.2 **Shop Workload**. The best method for accomplishing positive direction of shop workload is to identify and keep the following information current:

- a. Available work force by work center;
- b. Vehicles/equipment awaiting input by work center;
- c. Vehicles/equipment in process by work center;

| d. Vehicles/equipment deadlined for parts; cannibalization is not a normal acceptable business practice; replacement parts, whether new, rebuilt or refurbished or reconditioned, will equal or exceed OEM standards;

- e. Vehicles/equipment awaiting outgoing inspection;
- f. Vehicles/equipment awaiting customer pickup;
- g. Work performed by outside contractor.

4-1.9.3 **SRO Flow Procedures**. Figure 4-1-5 illustrates recommended SRO flow procedures. See paragraph 4-1.9.5 for details on preparing SRO.

#### 4-1.9.4 **Supply Support**

a. **Purpose**. For a maintenance organization to perform effectively, it is essential that it receive responsive repair parts support. This support requires a high degree of cooperation and communication between the management and staff of the shop and the shop store, and between the Public Works Officer and the Supply Officer. The responsibilities involved must be understood and fulfilled. COMNAVFACENGCOM and COMNAVSUPSYSCOM have recognized these understandings and promulgated them as policy outlined in the following paragraphs.

##### b. **Public Works Responsibility to the Supply Department**

(1) Ensure that all initial support repair parts received in Public Works are turned over to the Supply Department for inventory control and accountability. Initial support repair parts intended for activity stock shall not be retained in the physical custody or records of the Supply Department once issued to the end user.

(2) Provide information regarding repair parts requirements needed to support vehicles/equipment on hand or for any new vehicle/equipment received. (Requirements would normally be generated from actual operational experience or through normal routine inspection of equipment.)

(3) Furnish advance information regarding repair parts requirements for scheduled overhauls. (Requirements would be generated in the same manner outlined in paragraph 4-1.9.4.b(2).)

(4) Provide technical assistance to the transportation shop store in identifying parts and insurance items, and in determining parts interchangeability.

(5) Advise shop store of equipment scheduled for disposal or phase out, and assist in identifying stocked items which should be eliminated from the shop store.

(6) In the absence of stock items, provide end use O&M,N funds to permit procurement and delivery of repair parts required for work in progress, or for subsequent scheduled services and repair for which job orders have been issued.

## Flow Chart for Shop Repair Orders

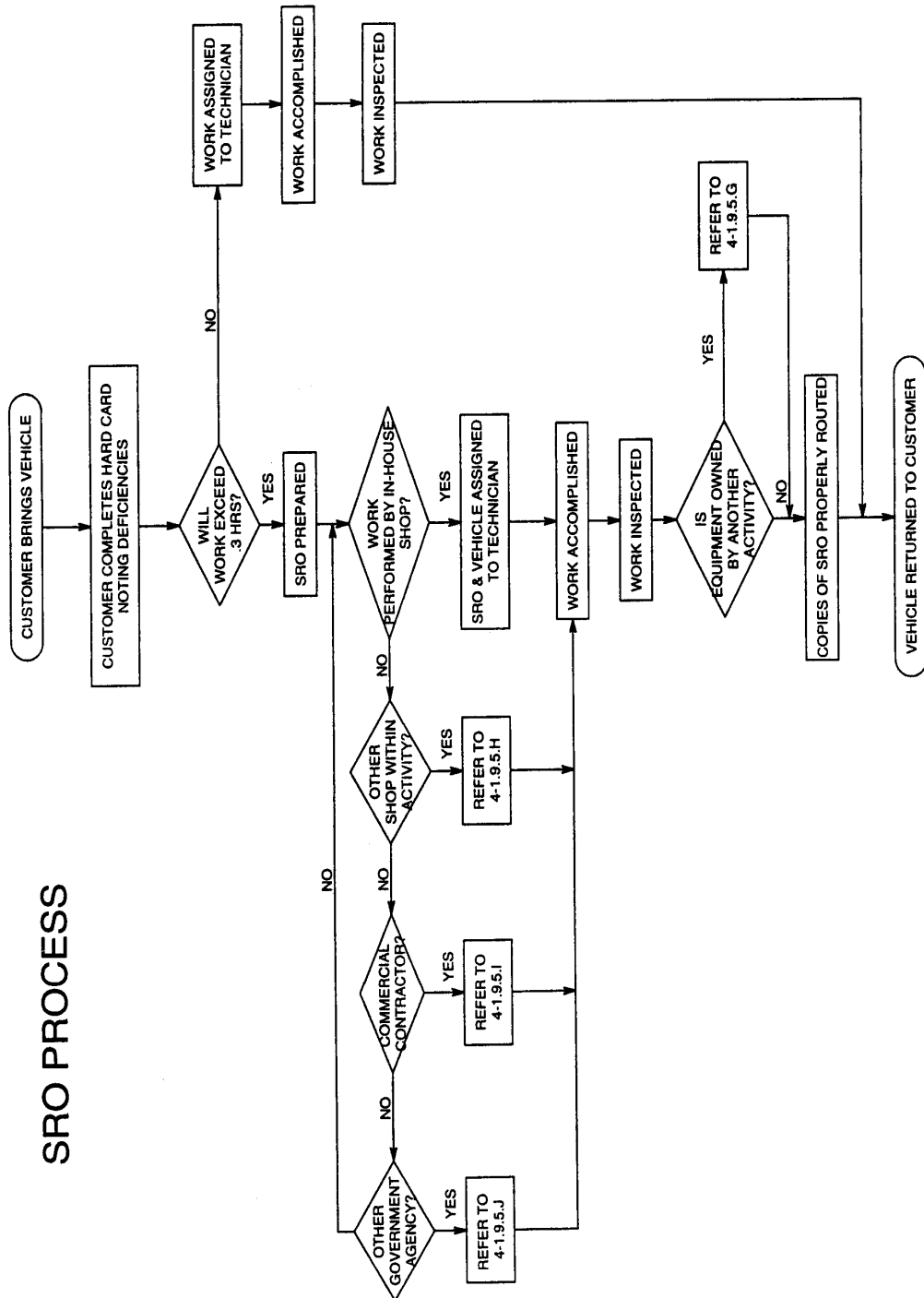


Figure 4-1-5. Flow Chart for SRO



(7) Conduct periodic follow-up of shop store parts orders (after required delivery date has passed) to ensure that appropriate action has been taken to reduce further delay.

(8) Encourage active coordination/communications between Public Works and Supply Department personnel.

c. Supply Department Responsibility to Public Works (Transportation)

(1) Provide for the timeliest method of repair parts support through the use of available stock, system stocks, or purchase action using imprest fund or blanket purchase authority and indefinite delivery parts contracts (IDTC) when practical.

(2) Perform technical research for parts identification and to determine part numbers, interchangeability, and cross-referenced parts numbers.

(3) Collaborate with Public Works in establishing stock levels in support of current and projected vehicle/equipment inventories.

(4) Record parts usage data for subsequent stock range and depth adjustments.

(5) Expedite local procurement action for immediate issue requirements when parts required are not readily available in the shop store or main supply department (e.g., BPAs, COPARS, IDTC).

(6) Review outstanding requisitions regularly to ensure that status received indicates satisfactory supply action is in progress. Follow-up as necessary to obtain delivery status.

(7) Advise Public Works personnel promptly indicating delivery date(s) of requested repair parts.

(8) Assume responsibility for staging of material by segregating material receipts applicable to specific repair jobs and advising the shop maintenance supervisor of material status.

(9) Encourage active coordination/communications between Supply Department and Public Works personnel.

d. Technical Parts Ordering Data. Surveys conducted by COMNAVFACENGCOM into the breakdown of repair parts support have revealed that much delay and downtime is caused by the mechanic's failure to provide adequate technical data when requesting parts. It shall be standard practice in all maintenance shops to provide shop stores with the following information for all but common hardware and bulk material.

(1) Description of Major Unit. Describe the vehicle or equipment unit for which the part is applicable, such as Truck, 1/2 ton, 4 x 2, 5,000#GVW.

(2) Manufacturer of Major Unit. Give the make.

(3) Model of Major Unit. Give manufacturer's model designation.

(4) Year of Manufacture or Model Year. Determine from nameplate.

(5) Vehicle Identification Number (VIN). Determine from nameplate.

(6) Description of Component. Describe major component for which the part is required. For example: Engine V8 260 cubic inches; Transmission, Automatic, 5 speed, Allison, Model AT-545. Component identification can be determined from manufacturer's component line set lists provided with all new equipment. (Manufacturer's line set lists should be filed in the equipment history record jacket.)

(7) Manufacturer of Component. Give make of major component when other than make of major unit.

(8) Serial Number of Component. Give serial number from component nameplate where applicable.

(9) Description of Part. Give full description of part using standard nomenclature with noun name first followed by descriptive modifiers such as sprocket, camshaft; kit, carburetor. Provide the part name when available; however, the correct part name is the responsibility of the parts person and should be verified. Part numbers should be recorded on the SRO for future reference. This practice saves research time for the parts person.

#### 4-1.9.5 **Preparation of Maintenance Forms**

a. Operator's Inspection Guide and Trouble Report (NAVFAC 9-11240/13). The Operator's Inspection Guide and Trouble Report is used by operators of motor vehicles to indicate the items they are required to inspect before and after operation. It also serves as a means of transmitting information regarding deficiencies detected during inspection or operation. The following procedures are prescribed for field application of this form (Figure 4-1-6).

(1) The operations dispatcher issues a form to the operator at the time of vehicle assignment.

(2) The operator inspects each item form before, and after operation.

(3) The operator indicates by a check mark any item that does not function properly. The "Remarks" space may be used for items not listed, or for additional information concerning deficiencies indicated by a check mark.

(4) The operator turns in the form to the dispatcher at the end of each day unless a deficiency is discovered, requiring the immediate attention of a mechanic.

(5) The operations dispatcher forwards the forms to the maintenance branch for action when deficiencies are noted.

(6) The work input section refers the NAVFAC 9-11240/13 (Operators Report) to the service writer or maintenance supervisor, who determines if the deficiencies noted require immediate attention, or if correction may be safely deferred until the next scheduled inspection. If the correction is deferred, the form is attached to the Service Record Card so that the deficiency may be described on the SRO when the next scheduled or unscheduled maintenance is done.

### Operator's Inspection Guide and Trouble Report (NAVFAC 9-11240/13)

OPERATOR'S INSPECTION GUIDE AND TROUBLE REPORT	
REGISTRATION NO.	ODMETER READING
Use this form as a guide when performing before and after operation inspections. Check (✓) items that require servicing by maintenance personnel.	
1. DAMAGE (Exterior/Interior/Missing Components)	
2. LEAKS (Oil, Gas, Water)	
3. TIRES (Check inflation, abnormal wear)	
4. FUEL, OIL, WATER SUPPLY (Antifreeze in season)	
5. BATTERY (Check water level, cables, etc.)	
6. HORN	
7. LIGHTS/REFLECTORS/MIRRORS/TURN SIGNALS	
8. INSTRUMENTS (Oil, Air, Temperature, etc.)	
9. WINDSHIELD WIPER	
10. CLEAN WINDSHIELD/VEHICLE INTERIOR	
11. CARGO MOUNTED EQUIPMENT	
12. STEERING	
13. SAFETY DEVICES (Seat belts, flares, etc.)	
14. DRIVE BELTS/PULLEYS	
15. BRAKES (Drain air tank when equipped)	
16. OTHER (Specify in "Remarks")	
DATE	OPERATOR'S SIGNATURE
REMARKS	

NAVFAC 9-11240/13 (12-89) W. U.S.O.P.O. 1989-627-001/801A3 A-10796  
Replaces DD Form 138 S/N 0105-L F-004-1195

Figure 4-1-6.

b. Shop Repair Order (SRO). The NAVFAC 11200/3A (Shop Repair Order) is no longer available. Activities should use a computer generated SRO (i.e., PC Transport, NFTS, etc.). Local procedures should be developed regarding SRO copy distribution. The SRO is used to:

(1) Specifically authorize and control repair work on all types of CESE, including authorization to requisition necessary repair parts from shop stores;

(2) Furnish basic information for management analysis;

(3) Authorize work on equipment when work is performed in a shop other than the activity transportation shop;

(4) Authorize a specific job under a Work Request (NAVCOMPT Form 140) issued by the ordering activity;

(5) Support the Order for Supplies or Services (DD Form 1155) as source material for the preparation of reports at small activities wholly serviced by a commercial facility.

c. SRO Preparation. An SRO shall be prepared each time labor or materials are expended for the maintenance, repair, modernization, alteration, or improvement of an item of equipment except for minor work that does not exceed 18 minutes (0.3 hours). The SRO shall clearly and specifically describe the work to be performed in terminology generally used in commercial flat rate manuals. Maintenance personnel are not authorized to perform work not specified on the SRO. The SRO shall be considered complete at the time the control section releases the equipment to the using organization's representative. In cases where items on the SRO must be deferred because of a lack of parts, and it is determined that the equipment can be safely returned to service, the remaining repair operations shall be entered on a new SRO and accomplished as scheduled work at a later date. Under no circumstances shall the original SRO be held open pending completion of repairs once the vehicle is released for use. The white copy of the SRO shall be completed showing all labor and material expended and totaled in the lower right hand block.

d. Preliminary Entries. A designated person in the work input and records section shall complete the heading entries of the SRO for each piece of equipment prior to the inspection due date shown on the preventive maintenance schedule.

e. Work Input and Records Section. Upon receipt of the SRO and related equipment, the service writer shall enter mileage or hours of operation, inspect the equipment, and make minor adjustments. As repair requirements are identified, each repair operation shall be entered on the SRO and standard job operation time (flat rate hours) applied to each separate repair operation to be accomplished. The SRO is then passed to the records section which issues a copy to the appropriate repair section supervisor for work accomplishment. A copy is also routed to the cost clerk. The record section retains a copy for tracking control and expediting until work is completed. The repair section supervisor assigns work to a mechanic, reviews and approves parts/material requirements, checks work in progress, checks work upon completion and signs the SRO indicating the work has been satisfactorily completed, and returns SRO to the work input and records section.

f. Work Accomplishment. The mechanic, upon receipt of the assigned SRO from his supervisor, checks in with the cost clerk, proceeds with the work, initials the completed repair operations specified on the SRO, and returns the SRO to his repair branch supervisor, and checks out with the cost clerk when work is completed or work is delayed for any reason. The cost clerk records the mechanic's start time on the labor job card, clips the card to a copy of the SRO, and files it with the active repair work file. When the work is stopped for any reason, the cost clerk pulls the copy of the SRO and

the labor job card and records the stop time. Delayed SROs shall be held in the cost clerk's pending file until again activated. When work is completed, the cost clerk shall ensure the SRO has been properly completed (actual time, compute downtime, etc.) and then advise the Operations Branch or customer that the vehicle is ready for pick up. The date, miles/hours, and type of service are then posted on the service record. The original copy of the SRO is filed in the vehicle history jacket for the life of the vehicle; a copy shall be forwarded to the Public Works Administrative Section if the work is for a customer, and a copy is to be forwarded to the station safety office if the work is the result of accident damage.

g. Work on Equipment Owned by Other Activities. Upon completion of shop work on equipment owned by another activity, disposition of the SRO shall be as follows:

(1) The original shall be priced and forwarded to the Comptroller Department or Fiscal Office of the performing activity for attachment to a bill or report and subsequent transmission to the ordering activity.

(2) A copy shall be forwarded with the vehicle for filing in the equipment history jacket.

(3) A copy shall be retained for the performing shop's records, or destroyed, as desired.

h. Work Performed by Other Shops Within the Activity. When work on equipment is to be performed by another shop within the activity, an SRO identifying the equipment and work to be performed, together with the appropriate transportation job order number, shall be prepared and distributed as follows:

(1) The original to the other shop for work listed on the SRO to be performed by that shop; the other shop shall perform designated repair operations, record elapsed time, price labor and material issues, and return the original with the equipment.

(2) A copy shall be retained by the records section when all work is performed by the other shop, or forwarded to the cost clerk when work shall be performed by both the transportation shop and other shop(s).

(3) A copy shall be retained by the records section until the original is returned.

i. Work Performed by Commercial Contractors. An order for supplies or services (DD Form 1155, supported by an SRO) is used when equipment maintenance work or service is performed by a contractor, or when occasional work is ordered from a commercial facility. The Work Input and Records Section shall ensure the SRO covering equipment scheduled for contract work is properly documented with the

necessary preliminary data and turned over to the Repair Section Supervisor. The supervisor shall list on the SRO the necessary repair operations and apply manufacturer's flat rate standards for each operation listed; then return the SRO to the records section for entry of final data. The SRO shall indicate the contract labor rate and amount, contract number, order number, and necessary accounting data. The SRO shall then be forwarded to the Contracting Officer who shall prepare an original and six copies of the DD Form 1155; one copy shall be forwarded to the Comptroller or Fiscal Officer, where the estimated amount shall be entered on allotment records as an obligation. The original and four copies, together with two copies of the SRO, shall be returned to the shop dispatcher for delivery with the equipment to the contractor. The person delivering the equipment to the contractor shall obtain a custody receipt and return it to the records section. Upon completion of repairs, the contractor shall return the equipment with the original and one copy of the SRO, four copies of the DD Form 1155, and the original plus three copies of the contractor's bill. Upon completion of the inspection and approval of the work performed by the contractor, the repair section supervisor shall certify the bill for payment. The original of the SRO, three copies of the DD Form 1155, and three copies of the contractor's bill shall then be forwarded to the appropriate office for final processing and payment. One copy of the SRO, one copy of the DD Form 1155, and one copy of the contractor's bill shall be filed in the vehicle history jacket for the life of the vehicle.

j. Work Performed by Other Government Agencies. Procedures for the performance of work or services by other Government departments or agencies, military or nonmilitary, are basically the same as for work performed by a commercial contractor. An appropriate order for work or services (Project Order, NAVCOMPT Form 2053 for other military departments; Order for Supplies or Services, DD Form 1155, or NAVCOMPT Form 2053 for nonmilitary departments) is prepared from data cited on the SRO supporting the order. Procedures for preparing the necessary documents are contained in the NAVSO P-1000-3. After completion of the work or services, the other Government department shall indicate the actual hours worked and the actual material cost on the SRO. The original and a copy of the SRO shall be returned to the requesting activity with a Voucher for Transfer Between Appropriations and/or Funds, Standard Form 1080. After inspection, approval, and certification of the work, the original of the SRO and attached documents shall be forwarded to the Comptroller or Fiscal Officer for payment. A copy of the SRO shall be filed in the vehicle history jacket for the life of the vehicle.

4-1.9.6 **Maintenance Inspection/Service Record.** The Maintenance Inspection/Service Record, NAVFAC 11200/46 (Figure 4-1-8), is an adhesive-type sticker which is placed on the windshield, dash, or other conspicuous section of the equipment after each scheduled PM service. The purpose of the form is to remind the operator of the date the equipment is scheduled for the next PM service. It also provides information on the dates of the last oil and filter change and lubrication.

MAINTENANCE INSPECTION/SERVICE RECORD			
NEXT MAINTENANCE DUE MILES/HOURS:		DATE	
→ *When NO service is performed, POST DATA from PRIOR STICKER			
SERVICES PERFORMED	* MILES/HOURS	* DATE	
<input type="checkbox"/> OIL CHANGE			
<input type="checkbox"/> FILTER CHANGE			
<input type="checkbox"/> LUBRICATE CHASSIS			
<input type="checkbox"/> SERVICE AIR CLEANER			
<input type="checkbox"/> ENGINE TUNE-UP			
<input type="checkbox"/> SMOG CONTROL DEVICE			
<input type="checkbox"/> SAFETY INSPECTION			
LAST PM (circle type)	A	B	C

NAVFAC 11260/46 (8-70)  
Supersedes NavDocs 9-11200/3

Figure 4-1-8.

**4-1.9.7 Operator's Daily PM Report (Construction and Allied Equipment).** The Operator's Daily PM Report, Construction and Allied Equipment, NAVFAC 11260/4 (Figure 4-1-9), is used by operators of construction and allied equipment (except weight handling equipment) as a guide when performing daily PM services, and when reporting equipment deficiencies, hours operated, and fuel issued. (See NAVFAC P-307, for Operator's Daily Check List of weight handling equipment.) The following procedures are prescribed for field application of NAVFAC 11260/4:

- a. The operations dispatcher issues a form to the operator when the equipment is assigned.
- b. The equipment operator performs pre-service maintenance checks and indicates findings on the form.
- c. The equipment operator records malfunctions of other items requiring attention as observed during the working day.
- d. The equipment operator records the number of gallons of fuel issued to the equipment while in his custody and enters hours operated at the end of the day. Hour readings shall be taken from the equipment hour meter. Actual operating hours shall be estimated for those units not equipped with hour meters.
- e. At the close of business each day, the form is turned in to the operations dispatcher, who reviews the form to ensure that the entries are valid and to take note of any deficiencies reported. The form is then forwarded to the maintenance dispatcher for further processing.

## Operator's Daily PM Report (Construction and Allied Equipment)

<b>OPERATOR'S DAILY PM REPORT</b> <b>CONSTRUCTION &amp; ALLIED EQUIPMENT</b> <b>NAVFAC 11280/4</b>			<small>USE THIS SIDE FOR REMARKS</small> <small>EXPLANATORY NOTES ON REVERSE SIDE.</small>	<small>USE THIS SIDE FOR REMARKS</small> <small>EXPLANATORY NOTES ON REVERSE SIDE.</small>
			<small>VEH. NO.</small> <b>44-05178</b>	<b>OPERATOR'S DAILY SERVICES</b>
			<small>FUEL</small> <b>12</b>	<b>1</b> Fill radiator to proper level. Remove debris from core.
			<small>OPS HRS</small> <b>3</b>	<b>2</b> Inspect belts for proper tension, alignments and condition.
<small>NO.</small>	<small>ITEM</small>	<small>OK</small>	<small>SERVICES PERFORMED</small>	<b>3</b> Fill to proper level. Inspect for leaks.
1	RADIATOR SOLUTION			<b>4</b> Inspect and clean oil bath and dry type as required.
2	BELT & FAN BELT		<b>ADJUSTED</b>	<b>5</b> Clean filter jar as often as conditions warrant.
3	ENGINE OIL LEVEL			<b>6</b> Visually inspect for conditions. Fill to proper level.
4	AIR CLEANER			<b>7</b> Fill to proper oil levels and inspect for leaks.
5	FUEL CLEANER			<b>8</b> Perform daily lubrication services as designated by the Transportation Division.
6	BATTERY		<b>ADDED WATER</b>	<b>9</b> Check tire pressure with gage. Inflate as necessary to recommended pressure. Remove glass, stones, nails, etc.
7	HYD. OIL LEVEL			<b>10</b> Inspect for condition, safety guards, boom stops, radius indicators, warning devices, ladders, fire extinguishers, etc.
8	LUBRICATION			<b>11</b> Inspect unit for general condition. Correct or report any deficiencies requiring mechanics attention.
9	TIRE CONDITION			<b>12</b> Fill fuel tank as necessary.
10	SAFETY EQUIP.			<b>13</b> Check all gages and meters for proper operation.
11	GENERAL COND.			<b>14</b> Perform prescribed shutdown services such as securing machines, draining air tanks, cover exhaust stacks, close hoods, etc.
12	FUEL LEVEL		<b>ADDED 12 GAL</b>	<b>15</b> List any deficiencies noted during operation.
13	INSTRUMENTS			<b>REMARKS:</b>
14	SHUTDOWN PRECAUTIONS			
15	OTHER			
<small>DATE</small> <b>12/11/88</b>		<small>OPERATOR'S SIGNATURE</small> <b>R.B. Ryan</b>		

Figure 4-1-9.

### 4-1.10 Preventive Maintenance Procedures for Automotive Vehicles

**4-1.10.1 Purpose of Preventive Maintenance.** An important element of the Transportation Maintenance Management Program is the periodic performance of scheduled preventive maintenance (PM) inspections, lubrication services, and adjustments. The purpose of PM is to keep equipment in a safe and reliable condition, with maximum equipment availability and minimum cost of maintenance and capital equipment.

**4-1.10.2 Operator Preventive Maintenance.** Operators are the first line of defense against equipment wear, failure, and damage. The operator must inspect the equipment on a daily basis before, during, and after operation so defects or malfunctions can be detected before they result in serious damage, failure, or accident. Defects detected during these inspections, or during operation of the equipment, shall be noted on the Operator's Inspection Guide and Trouble Report, NAVFAC 9-11240/13, and reported as soon as operation has ceased. The operator must stop operation immediately when a deficiency develops that renders the equipment unsafe, or could damage the equipment.

**4-1.10.3 Service Station Servicing.** The operator, service station attendant, or maintenance personnel shall perform the following services during each refueling:

- a. Check the oil level in crankcase and fluid levels in transmission and power steering pump;
- b. Check the tires for proper inflation and condition;



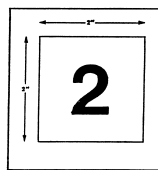
c. Check the electrolyte level in battery (maintenance-free batteries should be a visual check; DO NOT REMOVE TOP);

d. Check the coolant level and antifreeze.

**NOTE:** When the preceding functions are performed by other than the operator, it is still the operator's responsibility to supervise the performance, ensure that the required services have been accomplished, and determine that the equipment appears to be in safe operating condition.

4-1.10.4 **Scheduled Preventive Maintenance for Automotive Vehicles.** Automotive vehicles shall be inspected periodically by qualified automotive inspection personnel for safety and reliability as follows:

a. **Safety Inspection.** Each motor vehicle shall be inspected for safety at intervals not to exceed 12 months or 12,000 miles, whichever occurs first. Vehicles shall display and current inspection sticker when the safety inspection when the inspection is complete and meets safety standards. An example of this 2-inch square sticker is noted below but is not to normal scale.



**Safety Inspection Sticker**

To avoid unnecessary downtime, the safety inspection shall be performed at the time of the scheduled reliability inspection in accordance with the manufacturer's recommendations. The safety inspection shall include all the items set forth in paragraph 4.1.10.5. Any deficiencies detected shall be corrected before returning the vehicle to an operational status. For commercial motor vehicles, documentation of an annual safety inspection shall be in compliance with 49CFR396.17. This documentation may be in the form of a report or a sticker or decal (e.g., NAVFAC 11200/46) that contains the following:

- (1) Date of inspection
- (2) Name and address of maintenance facility holding report
- (3) Vehicle I.D.
- (4) Certification of successful inspection

b. **Reliability Inspection.** In addition to the safety inspection prescribed, vehicles shall be inspected and serviced in accordance with the manufacturer's prescribed services and service intervals, such as miles or time as set forth in the manufacturer's shop manual and lubrication chart furnished with the vehicle. Corrective adjustments and repair actions taken as the result of serviceability inspections shall generally be limited to only those items prescribed by the manufacturer and only to the extent necessary to restore the vehicle to a degree of serviceability consistent with

achieving the highest degree of cost effectiveness. The inspector shall authorize repairs only after a thorough diagnosis and detection of malfunction, wear, or deterioration has been determined. When repairs are to be accomplished by commercial contract, only the contracting officer has the authority to authorize work, and the request must be in writing unless deemed an emergency or specified within the maintenance contract. Where the manufacturer specifies optional adjustments, such as "engine tune-up," such adjustments shall be made. Adverse local conditions may require more frequent routine maintenance inspections of a preventive nature to reduce road failure service calls. In such cases, management shall determine the requirement and the action shall be a policy matter directed by management in writing.

c. Development of Specifications for Scheduled Inspections and Services. Each activity shall develop an inspection specification and schedule in accordance with manufacturers' specifications. The inspection, lubrication, and adjustment functions and frequencies shall be determined from those recommended in the manufacturer's maintenance manual provided with the vehicle. A separate specification and schedule shall be developed for each make and model where different. These specifications and schedules shall be developed under the direction of the Transportation Director and shall be approved in writing.

d. Unscheduled Maintenance Service. Unscheduled maintenance service is the correction of deficiencies reported by the vehicle operator that occur between scheduled safety or other inspections and services as prescribed by the manufacturer. Unscheduled maintenance services shall generally be limited to the correction of only those specific items reported as being deficient by the operator and confirmed by qualified inspection personnel. Other unreported deficiencies observed by the inspector at the time of an unscheduled service that affect safety, or could cause damage to the equipment, shall be corrected prior to releasing the vehicle for service.

e. Air Conditioner Maintenance Operations. Chlorofluorocarbons (CFCs) have been identified as ozone depleting substances. Automotive vehicle air conditioners have been identified as a controllable source of CFC-12 (Freon R-12) atmospheric emissions. Per OPNAVINST 5090.2, emissions of ozone depleting substances are prohibited.

(1) Servicing shall include the requirement to recycle/reclaim CFC-12.

(2) All service contract bidders shall have equipment certified to recycle/reclaim CFC-12.

(3) Only equipment certified by Underwriters Laboratory Inc. (U.L. 1963) shall be used by certified technicians to recover, recycle, or reclaim CFC-12.

f. Retrofit of Ozone-Depleting Substances (ODS). Class I ozone-depleting substances (ODS), including CFC-12 used in most air conditioning systems of vehicles manufactured before model year 1994, were phased out of production in December

1995. To ensure Navy vehicle fleet managers are making appropriate plans to support existing vehicle fleets, the following policy applies to all Navy vehicle inventory holders:

(1) Vehicle retrofits shall not be performed on functioning MVAC systems.

(2) Should major repair of an air conditioning system be required prior to the end of the useful life of the vehicle, retrofit should be considered as an option and the retrofit should be the most economical system available.

(3) Retrofits shall conform to OPNAVINST 5090.1B, Chapter 6.

(4) Use only products recommended by original equipment manufacturers (OEMs), and products which are EPA Significant New Alternatives Program (SNAP) approved.

4-1.10.5 **Automotive Vehicle Safety Inspection Checklist**. The following inspection shall be performed every 12 months or 12,000 miles, whichever occurs first, or simultaneously with the manufacturer's recommended service interval and services.

a. **Brakes**

(1) Test to determine if brakes are functioning properly.

(2) Check brake pedal free travel as required.

(3) Remove a front wheel (alternate sides each safety inspection); inspect brake drum or rotor for wear or cracking; inspect linings or pads for excessive wear; check wheel cylinders for leaks and evidence of deterioration. (Remove opposite rear wheel and repeat the process.)

(4) Check fluid level and all hydraulic brake lines for leaks.

(5) On air brake systems, inspect air brake accessories and all airlines and air tanks for leaks and deterioration; check air brake instruments, control air valves, trailer hose, and glad hands.

b. **Lights**

(1) Check all lights, signals, and reflectors.

(2) Check condition of trailer jumper cable.

(3) Check headlights for proper alignment.

c. **Instruments, Controls, and Warning Devices**. Check instruments, gages, mirrors, switches, controls, and warning devices for proper functioning and damage. Note: All bi-directional machines, such as rollers, compactors, front-end loaders, bulldozers, and similar equipment, shall be equipped with a horn, distinguishable from

surrounding noise level, which shall be operated as needed when the machine is moving in either direction. No employer shall permit earthmoving or compacting equipment which has an obstructive view to the rear to be used in reverse gear unless the equipment has an in operation a reverse signal alarm. Refer to 29 CFR 1926.602. It has been shown that backup alarms are valuable in protecting workers and the general public from serious injury. Backup alarms shall be installed on all Navy vehicles with a capacity of 1 ton or higher and especially on vehicles where the driver's view to the rear is obstructed.

d. Exhaust System. Check muffler, exhaust and tailpipes, and all connections for leaks.

e. Steering System. Check steering devices and linkage for wear and damage.

f. Seat Belts. Check all safety belts for wear and proper mounting.

g. Fifth Wheel and Trailer. Check trailer kingpin for wear and damage. Check tow bars, tongue sockets, and safety chains.

h. Tires. Check all tires for damage or excessive wear. Remove and replace tires on front wheels of buses, trucks, or truck tractors when the tires in use have less than 2/16-inch of tread at any point on a major tread groove. Tires shall be replaced when any tread groove pattern measures less than 1/16-inch.

i. Windshield Wipers, Glass, and Defrosters. Check wipers, glass, and defrosters for proper operation, wear, damage, and deterioration.

j. Other Items. Check all other components required by the states in which the vehicle is operated.

k. Exhaust Emission. Check exhaust emission for compliance with local restrictions.

l. Exhaust Emission Controls Tampering Check. Check for the presence of, or damage to, the catalytic converter, fuel filler inlet restraint, exhaust gas recirculation valve, air pump, air pump drive belt, and other pollution control devices which are readily visible. Check also for plugged or disconnected vacuum lines.

4-1.10.6 ***Maintenance of Vehicle in a Fuel Efficient Condition***. To achieve maximum fuel economy, the vehicle engine must efficiently convert the fuel into horsepower. This power, in turn, must be efficiently transmitted through the drive train to the wheels. Finally, the vehicle must roll freely on the road. The following maintenance actions must be taken to ensure the total vehicle is maintained to achieve the top fuel efficiency for which it was designed.

a. Emission Inspection and Maintenance

(1) Under the Clean Air Act, as amended, the DoD is required to comply with state and local programs to improve air quality. All DoD components shall conform to the state and local standards to monitor and analyze emissions from commercial vehicles and shall utilize state and local guidelines in conducting such analysis.

(2) Section 203/205 of the Clean Air Act also prohibits DoD personnel or contractors from removing or rendering inoperative any emission control device or element of design on automotive vehicles operated within the United States. The civil penalty for violation of this provision is \$2,500 per vehicle. Violations of the unleaded fuels regulations can result in penalties of up to \$10,000 per violation. When performing corrective adjustments and repair actions or tune-ups, engine settings shall not be accomplished outside of the manufacturer's recommended specifications, nor shall pollution control related equipment, such as the catalytic converter, exhaust gas recirculation valve, or heated air intake system, be removed or rendered inoperative.

b. Engine. Tune the engine as required by the manufacturer's recommended specifications using modern diagnostic and test equipment. Especially check to ensure that the following systems and components are functioning correctly.

- (1) Ignition timing
- (2) Emission control system
- (3) Automatic choke is fully released when engine is warm
- (4) Exhaust system is unrestricted
- (5) Air cleaner is unrestricted
- (6) Thermostat is closing/opening at specified coolant temperatures

c. Power Train Chassis, Wheels/Tires. Abnormal power train and chassis friction and other rolling resistance requires excessive fuel consumption which can be eliminated or reduced by the following actions:

- (1) Adjust service and parking brakes to ensure there is no drag;
- (2) Adjust wheel bearings to proper torque rating;
- (3) Check wheel alignment to ensure proper camber, castor, and toe-in;
- (4) Inspect springs and hangers to ensure vehicle is tracking correctly;
- (5) Inspect motor and transmission mounts and drive shaft to ensure drive train is not distorted;
- (6) Lubricate chassis at frequencies recommended by manufacturer;
- (7) Maintain vehicle manufacturer's rated air pressure. This shall reduce rolling resistance and prolong tire life. Under-inflated tires are also a safety hazard.

4-1.10.7 **Tire Maintenance**. Tire and tube maintenance procedures outlined in Rubber Manufacturers Association (RMA) publications for passenger, truck and bus, off-highway, industrial, special purpose, and farm tires shall be used in maintaining Navy vehicle and equipment tires. Tires shall be inspected and removed from service

in accordance with the safety standards prescribed in RMA publications. These publications are available from the Rubber Manufacturers Association Inc., 1400 K Street NW., Washington, DC 20005.

a. Retread Tires. Retreaded tires shall be used as replacement tires in accordance with the EPA Guideline for the Federal Procurement of Retreaded Tires and must be listed on the current issue of GSA's Qualified Products Lists (QPL); QPL-22-T-381, QPL-22-T-410, QPL-22-T-1083, QPL-22-T-1619, for the particular tire type. Worn tires that have been inspected and the casings found to be structurally sound shall be retreaded for further use in accordance with the procedures established below. Retreaded tires shall not be used on the front wheels of Buses, Ambulances, Police, Rescue or Fire Fighting Vehicles or on any vehicle where the manufacturer requires speed-rated tires. Re-grooving on tires is prohibited.

b. Tire Retreading Program. The use of retread tires can produce substantial reduction in operating expenses of vehicles and equipment. Retreading services are available in most areas under the prevailing GSA Federal Supply Schedule (FSG-26). In areas where GSA schedules are not available for retreading services, it is recommended that a contract be awarded for such service under competitive bidding procedures. Retreading is a labor-intensive workmanship-oriented process and must be monitored closely and frequently. The following procedures shall be followed in assuring quality retreads.

(1) Specification of Work. Tire retreading, repair, and material shall be in accordance with Federal Specification ZZ-T-441H (6-13-89) entitled "Tire Pneumatic: Retreaded and Repaired." Contractors shall furnish documentation showing their facility is certified under GSA's Quality Assurance Facility Inspection Program (QAFIP). The QAFIP certification shall be displayed in the contractor's business office and inspected by the activity's representative to insure the certification is updated as required.

(2) Scope of Work. As in any retreading system, a retread is only as good as its basic casing. Therefore, careful selection and stringent inspection procedures must be followed. Inspection of the casings before and after retreading is of prime importance for good quality control. Quality assurance shall be in accordance with applicable paragraphs of Sections 3 and 4 of specification ZZ-T-441H, with the following additional requirements:

(a) Before Retreading. Select premium tires for retreading that have been well maintained during operation and have been pulled for retreading when tread depth is not less than 2/16 of an inch deep on front-mounted tires and not less than 2/32 of an inch on all other tires. Casings, as furnished to the contractor, shall be identified as Navy-owned and shall be further inspected by the contractor in accordance with paragraph 3.3 of ZZ-T-441H before acceptance for retreading.

(b) During and After Retreading. As set forth in paragraph 4.1 of ZZ-T-441H, the Government reserves the right to perform any of the inspections as

provided in the specification for compliance with prescribed contract requirements. A representative of the user activity should establish the inspection procedure with the Contracting Officer in order that quality checks of the contractor's plant can be arranged. A visit to the retreading plant to observe craftsmanship, process controls, condition of processing equipment, quality of the rubber used, and cleanliness of the shop provides the necessary confidence level for quality assurance. When the retreaded tires are returned to the user, the activity's representative who has become familiar with the contractor's retreading process should inspect each tire. Retreaded tires found to be defective should be returned to the contractor (at the contractor's expense) for corrective action. Activity inspections shall verify that the newly delivered retreaded tire is on the original Navy casing. Also, additional visual inspections are to be performed as outlined in Tables II and III of Specification ZZ-T-441H, to determine any defective material used, poor processing, or poor workmanship.

c. Tire Marking/Identification. Tire labeling of ownership shall be established by user activities in the following areas:

- (1) On tire casings furnished to a contractor for retreading/repair service.
- (2) On popular size tires under specific conditions.
  - (a) To improve local control and accountability.
  - (b) As a deterrent to pilferage.

Tire labeling/marking shall be by either patch or branding for permanent identification and shall be made up of enough lettering to spell out "USN activity." This label is to be located on or into the area of the tire side wall (but not in the scuff ribs) and shall not interfere with other DoT required markings. Branded letters shall be approximately 1/16 to 1/8 inches deep, measured from the surface immediately surrounding the lettering.

#### **4-1.11 Preventive Maintenance Procedures For Construction Specialized and Allied Equipment (Less Weight Handling Equipment)**

4-1.11.1 **General.** Preventive maintenance (PM) principles and general procedures set forth in paragraphs 4-1.9 through 4-1.13 are equally applicable to all Navy-owned/leased (in excess of 180 days) construction equipment. Maintenance of short-term rental equipment is specifically addressed in paragraph 2.9.10 of this manual. (See the NAVFAC P-307 for weight handling equipment.) Maintenance inspections and services shall be performed as prescribed by the manufacturer in the maintenance manual provided with the equipment and at the recommended frequencies. The frequencies shall generally be based on hours of operation as recorded on an hour meter, rather than fixed time intervals, except for the daily services performed by the operator.

4-1.11.2 **Operator's Daily Inspection.** All equipment shall be given a daily inspection and service by the assigned operator before, during, and after operation. The operator shall complete this daily requirement in accordance with the procedures set forth in paragraph 4-1.9.7 and NAVFAC 11260/4, performing all inspections, services, and adjustments specified. The Transportation Director shall augment these procedures with any additional daily services to be performed by the operator, as recommended by the manufacturer; such instructions shall be explicit and in writing. The operator shall turn in a completed NAVFAC 11260/4 (operators report) to the equipment dispatcher or his supervisor daily. It shall be the operator's responsibility to ensure that the equipment is safe and reliable. The operator shall stop the equipment immediately when a deficiency develops that renders the equipment unsafe or could damage the equipment.

4-1.11.3 **Development of Specifications for Inspections and Services.** Each activity shall prepare a specification that shall set forth, in writing, the inspection and service operation, and frequency with which that operation shall be performed. Data for the specification and schedule shall be obtained from the manufacturer's maintenance manual provided with the equipment. If data is not provided by the manufacturer, it shall be established locally, with frequencies expressed in terms of operating hours. Similarly, adverse local conditions may require the specification of additional operations or frequencies by the activity, beyond or different from those recommended by the manufacturer. Emphasis shall be placed on the inspection and servicing of all control and safety devices. A separate specification and schedule format shall be prepared for each make and model where different. These specifications and schedules shall be approved in writing by the Transportation Director. The TEMC can provide assistance in preparing the specifications.

4-1.11.4 **Lubrication Schedule.** Equipment shall be lubricated in accordance with recommendations provided by the manufacturer's maintenance shop manual or operator's manual provided with the equipment. When this data is not available, the data shall be obtained from the manufacturer by the activity. Contact the TEMC for assistance if unable to obtain the necessary data.

4-1.11.5 **Maintenance and Testing of Boom, Hi-Lift and Aerial Service Trucks/Equipment**

a. **Applicability.** This section applies to vehicle mounted elevating and rotating aerial or lifting devices; boom supported elevating work platforms which either telescope, articulate, rotate or extend; self-propelled, vertically adjustable work platforms; airline ground-support vehicle-mounted lift devices; and maintenance trucks with hydraulically operated extension ladders that raise, lift, move, or support personnel and/or material. These include equipment such as equipment codes 0725, 0729, 0731, 0735, and 5460, and this equipment shall be maintained and tested as noted below.

(1) **Operation.** Operators shall have a valid OF-346 in their possession when operating any of the equipment described above. The OF-346 must show each



type of equipment the licensee is authorized to operate. Applicable guidelines pertaining to policy and procedure to be followed for testing and licensing equipment operators are provided in Chapter 3 of this publication. These procedures shall be used when issuing an OF-346

(2) Maintenance. Maintenance and lubrication [includes regularly scheduled preventive maintenance (PM) type inspections] shall be performed per manufacturers' recommendations and guidelines. If the manufacturers' maintenance and lubrication frequency and inspection requirements are not available, the activity shall develop and accomplish its own maintenance, lubrication and/or inspection requirements and schedules based on available guidelines and past local experience. An equipment history record file shall be developed and maintained for each individual unit of equipment. Each equipment history record file shall contain the current, and immediate prior documentation for all types of inspections, test reports, and certifications. The file shall also contain all prior SROs, equipment specifications, and modification/alteration approvals.

(3) Inspection

(a) Daily. Each operator shall perform a check of the equipment prior to placing the equipment in service and again when securing the equipment. Using the manufacturer's manual and past local experience, each activity shall develop a daily checklist for the operators' use. The completed daily checklists shall be kept on file for a minimum of 60 days. If the operator detects any condition that would indicate the equipment to be unsafe or unreliable for use, the equipment shall be removed from service until the suspect condition is corrected.

(b) Annual. A condition inspection, an electrical insulation test (when applicable), and a load test shall be performed annually. Certification of these inspections and tests shall be the responsibility of the designated (in writing) activity certifying official who shall certify the equipment safe and reliable for use. A copy of the certification shall be posted on the equipment, in full view of the operator, with the original certification form being filed in the equipment history record file. A locally developed condition inspection, load test, and certification format shall be used.

(4) Testing

(a) Load Testing. Prior to any load testing, a complete condition inspection shall be performed. Any items found to be unsatisfactory, which shall render the equipment unsafe (including warning devices) or unreliable, shall be corrected prior to conducting the load test. Nondestructive testing (NDT) methods shall be used where there are questionable structural components. In addition to visual inspections, all load lifting hooks shall be removed and nondestructively tested every five years, if applicable. All hooks shall be measured for hook throat opening before and after each load test. A permanent tram point base measurement shall be established across the hook throat opening and hooks shall be discarded if the throat opening varies more

than five (5) percent of the base measurement. Test loads can vary from 100 to 150 percent (based on type of equipment being tested) with a tolerance of +5%/-0% of the manufacturer's rated capacity. Outriggers or stabilizers (if so equipped) shall be fully deployed on a firm level surface prior to lifting test loads or working loads. Unless restricted by the manufacturer, the following test loads shall be used as a minimum:

TYPE VEHICLES	EC	TEST LOAD PERCENTAGE
Overhead maintenance truck	0725	Manufacturer's recommendation
Wrecker truck	0729	Manufacturer's recommendation
HI-lift loader truck	0731	133
<u>Reel Truck</u>	0735	110
Maintenance platform	5460	Manufacturer's recommendation

The weight of all handling gear shall be included as part of the test load. The reference material listed in paragraph 4-1.11.5.b shall be used to establish test procedures for the particular type (EC) of equipment being tested, including the load testing of hydraulically and electrically operated tail-gates used for lifting.

(b) Electrical Insulation Test. All aerial devices/equipment shall be clearly marked and readily visible to inform the operator whether the aerial device is insulated or non-insulated. In the case of insulated aerial devices, the voltage for which the aerial device has been satisfactorily tested shall be posted and readily visible to the operator. Aerial devices/equipment that are not rated for use as an insulated device, and operating near any electrical transmission lines, shall maintain the following minimum required clearances:

<u>VOLTAGE (KV)</u>	<u>MINIMUM REQUIRED CLEARANCE (FT.)</u>
TO 50	10
51 TO 200	15
201 TO 350	20
351 TO 500	25
501 TO 750	35
751 TO 1000	45

Operators of aerial devices that are rated for use as an insulated device must know the rated line voltage of energized power lines in order not to exceed the insulation test voltage of their aerial device. Insulation testing equipment shall meet the requirements of American National Standard Institute Techniques for Dielectric Tests, ANSI/IEEE standards and American National Standard Institute Techniques for Switching Impulse Testing, ANSI/IEEE standards. A test procedure, which is approved by the aerial

device manufacturer or an equivalent entity, shall be considered an acceptable test for certification.

(5) Certification. The certifying officer is responsible for ensuring the safety and reliability of all boom, hi-lift, and aerial service trucks/equipment at the activity. The certifying officer shall be designated in writing by the Commanding Officer of the activity. The certifying officer shall, in turn, designate the authorized test directors and inspection and test personnel. Certifications shall be based on the condition inspection and load tests or other appropriate proof test prescribed in paragraphs 4-1.11.5.a(3) and (4). These inspections and tests shall be performed by technically competent inspection and test personnel under the direction of a designated test director. Upon successful completion of the condition inspection and load test or other appropriate proof test, a Certification of Load Test and Condition Inspection shall be signed by the test director, inspection and test personnel, and the certifying officer. All certifications are automatically void after one year, after exceeding the certified rated capacity during operation, or after an adjustment, repair, disassembly, replacement, or alteration/modification of a load bearing or load controlling part or component.

(6) Modifications. No modification or additions which affect lifting capacity, stability, the mechanical, hydraulic or electrical integrity, or safe operation of the aerial device shall be made without the written approval of the manufacturer or an equivalent entity (e.g., EFD/TEMC). Upon the approval and completion of such modifications, and after repairs or adjustments to load bearing/controlling components, the equipment shall be load tested and certified.

(7) Markings/Instructions/Warnings. As a minimum, the following information shall be permanently affixed, clearly understandable and readily visible to the operator.

- (a) Equipment identification number (USN);
- (b) The function of each control;
- (c) Rated load capacities at all configurations;
- (d) Annual certification and date of load test;
- (e) Whether insulated or non-insulated;
- (f) Voltage and date of insulation test;
- (g) Any operational or electrical hazards involved during operation.

b. References. In addition to the foregoing instructions, the current edition/revision of the following references shall be used to establish a program for the inspection, maintenance, and testing of related aerial lifting devices/equipment:

- (1) Manufacturers' technical manuals/instructions;

- (2) ANSI A92.2, Vehicle-Mounted Elevating and Rotating Aerial Device;
- (3) ANSI A92.3, Manually Propelled Elevating Work Platforms;
- (4) ANSI A92.5, Boom-Supported Elevating Work Platforms;
- (5) ANSI A92.6, Self-Propelled Elevating Work Platforms;
- (6) ANSI A92.7, Airline Ground Support Vehicle-Mounted Vertical Lift Devices;
- (7) ASME/ANSI B30.22, Articulating Boom Cranes (Commercial Truck-Mounted);
- (8) NFPA 1914, Testing Fire Department Aerial Devices (Ladder Trucks/Platforms);

#### 4-1.11.6 **Inspection and Testing of Fire Department Aerial Devices**

a. **General.** All fire department aerial devices shall be inspected and tested in accordance with the current edition of the National Fire Protection Association (NFPA) 1914 Standard for "Testing Fire Department Aerial Devices." The NFPA 1914 specifies minimum inspection and testing requirements and shall be used to supplement, not to replace or modify, any instructions recommended by the aerial device manufacturer. Aerial devices shall include fire apparatus equipped with aerial ladders, elevating platforms, and water towers designed to position personnel, handle materials and/or discharge water as specified in NFPA 1901, Standard on Automotive Fire Apparatus.

b. **Scope.** Visual inspections, operational tests, and load tests specified in NFPA 1914 shall be conducted at least annually; after major repairs or overhaul; when the aerial device may have been subjected to unusual operating conditions of stress or load; or when there is reason to believe that usage has exceeded the manufacturer's recommended operating procedures or capacity limits.

(1) **Inspection Personnel.** Most of the inspections and tests outlined in NFPA 1914 are intended to be performed by "qualified" fire department personnel. "Qualified" is defined as a person who, by possession of a recognized degree, certificate, professional standing, skill, knowledge, training and experience has demonstrated the ability to deal with problems relating to the subject matter, the work, or the project. However, if the fire department prefers, a third-party testing company or the manufacturer can perform the inspections and tests.

(2) **Load Testing.** Test loads shall be equal to the manufacturer's specified rated load capacity. The handling gear, supporting hangers, containers, etc. shall be calculated as part of the test load and the total test load shall not exceed the rated load capacity. Tests shall be conducted when wind velocity is less than ten miles

per hour (MPH). The unsupported aerial device shall sustain the test load for FIVE Minutes.

(3) Nondestructive Testing (NDT). In addition to the required annual inspections and tests, a nondestructive test shall be performed at least every five years. Several methods of NDT are used to inspect structural components without physically altering or damaging the materials. Nondestructive testing procedures shall be conducted in accordance with "American Society for Testing and Materials (ASTM)" standards. The person actually performing the NDT shall be certified as an "American Society for Nondestructive Testing (ASNT)" Level II Testing Technician. Structural welds shall be inspected in accordance with the American Welding Society (AWS) Standard AWS D14.4 and comply with a Class IV weld as outlined in Table 7-17.4 of AWS D14.4. Nondestructive testing may be desirable on a more frequent basis than every five years, depending on the service the aerial device is subject to (i.e., extensive use over rough roads that rack the device in its bed). Whenever structural damage is detected, the aerial device shall be removed from service, and the condition shall be reported, in writing, to the manufacturer with a copy of the report going to the Director of Navy Fire and Emergency Services. The aerial device shall be repaired to an acceptance level in accordance with the manufacturer's standard and tested for full operational use before it is placed back in service.

c. Procedures. Every aerial device shall be inspected and tested in accordance with the NFPA 1914 Standard. However, since each manufacturer's unit will be somewhat different, specific attention shall be given to the manufacturer's instructions concerning periodic maintenance and inspection checks. Also, specific written checklists should be developed by each fire department for their style and brand of apparatus, combining the manufacturer's recommended checks with the procedures outlined in the NFPA 1914 standard.

d. Records and Reports. The aerial devices' service records shall always be checked for any reports that may indicate defective conditions. A report form, which shall include, as a minimum, the information required by NFPA 1914, shall be completed for each inspection/test performed and signed by the person responsible for the test. All inspection and test records shall be maintained in the equipment history record file for the respective aerial device. A copy of all test report forms shall be forwarded to the Director of Navy Fire and Emergency Services.

4-1.12 **Corrosion Prevention**. Vehicles and equipment at many shore activities are subject to severe corrosion due to atmospheric conditions or the contact of salt from ice removal operations. Corrosion damage causes excessive maintenance expenditures to correct the damage, or significantly reduces the economic service life of the vehicles and equipment. Corrosion can be economically controlled by the proper application of protective coatings and adequate maintenance of these coatings. Vehicle and equipment manufacturers have been responsive in applying corrosion treatment to vehicles at the factory. Manufacturers' extended warranties and state-of-the-art procedures minimize the need for additional corrosion protection. All new vehicles

should be examined to determine if corrosion treatment has been applied. If corrosion treatment is needed, it usually is more economical to utilize commercial sources as they are properly equipped and shall provide warranty service.

#### 4-1.13 **Technical Information And Procedures**

4-1.13.1 **Technical Publications**. Technical publications are an essential tool of the Transportation Maintenance Management Program. There is a continuing need for both management and maintenance personnel to refer to authoritative sources of technical data. Maintenance management shall be able to refer readily to competent technical authority in support of decisions that pertain to technical procedures. It is the responsibility of maintenance management to constantly review and disseminate to maintenance personnel the latest technical data pertaining to the maintenance of the assigned equipment.

a. **Equipment Manufacturers' Technical Publications**. Each equipment manufacturer is required under the provisions of the purchase contract to furnish operator manuals, lubrication charts, parts manuals, and shop repair manuals with each purchase. **NOTE**: Only one set of manuals shall be provided to each consignee regardless of the number of vehicles/equipment delivered. If new equipment arrives without the required manuals, the receiving activity should report this fact directly to Naval Facilities Expeditionary Logistics Center immediately. Unless otherwise specified in this publication, the manuals provided by the manufacturer are the authoritative technical guides for maintenance of the equipment. Replacement manuals, additional manuals, or manuals for equipment transferred from one activity to another without manuals, can be stocked by NFELC Port Hueneme upon letter request; Naval Facilities Expeditionary Logistics Center shall provide any ordering instructions required. Original equipment manufacturers periodically publish service bulletins that provide further information concerning recommended modifications applicable to Navy-purchased equipment. Such service bulletins shall be considered the necessary authority to effect such modifications without further reference to COMNAVFACENGCOM or the responsible TEMC.

b. **Military Technical Publications**. Technical publications covering specific equipment of military design, such as U.S. Army Technical Manuals (TM) and Modification Work Orders (MWOs), constitute the authoritative technical information sources for maintenance procedures applicable to an item of equipment unless otherwise prescribed in this publication. Technical modifications to equipment recommended by the responsible military service shall constitute all the necessary authority to effect such modifications.

c. **Job Time Standards**. Job time standards [otherwise known as "engineered performance standards" (EPS) or "flat rate standards"] shall be applied by the service writer on all SROs. The standards set forth in the following subparagraphs are the approved sources of standards for all general purpose vehicles covered by the referenced publications. COMNAVFACENGCOM (Code PWT) shall be notified via the

appropriate TEMC of any standards in approved publications that appear to be unrealistic.

(1) Job Time Standard Publications

(a) Motor's Flat Rate and Parts Manual, Motor, 250 W. 55th Street, New York, NY 10019.

(b) Chilton Flat Rate Manual, Chilton Company, Chilton Way, Radnor, PA 19089.

(c) Mitchell Manuals, "Mechanical Parts/Labor Estimating Guides" P.O. Box 26260, San Diego, CA 92126.

(2) Equipment Manufacturers' Job Time Standards. Job time standards published by the equipment manufacturer may be used in lieu of any of the foregoing.

(3) Equipment Not Covered by Job Time Standards. Job time standards for equipment not covered by the foregoing shall be developed locally and approved in writing by the Transportation Division Director.

4-1.13.2 **Procedures for Obtaining Technical Publications**. Normally, commercial publications are procured by local purchase. Overseas activities without commercial sources of supply shall forward requisitions to the Fleet and Industrial Supply Centers at Oakland, CA or Norfolk, VA, as appropriate, via the activity Supply Department.

4-1.13.3 **Manufacturers' Service Representatives**. The transportation equipment industry generally has service representatives available throughout the world. These representatives are trained specialists with technical knowledge of their particular fields and are a valuable source of information to an equipment maintenance organization. As a general rule, the services of these representatives are provided without cost to the Government. The EFDs/TEMCs are focal points for contact with such representatives, and can assist an activity in arranging for their services.

4-1.14 **Facilities Layout For Transportation Shops**

4-1.14.1 **General Criteria**. Standard criteria for transportation shop layouts have been developed by COMNAVFACENGCOM. These standard criteria shall be used as guidelines in developing the most economical and efficient shop configuration. New construction shall combine the maintenance and operations functions for automotive, construction, weight handling, and railway equipment. Maximum accessibility of support areas to production bays, centralized administrative areas, and drive-through general repair bays that eliminate wasteful traffic aisles are typical of improved shop layout features. Activities planning new or modified facilities shall obtain assistance from the appropriate EFD/TEMC.

## **SECTION 2. NCF/SOU EQUIPMENT MAINTENANCE**

This section pertains to those units assigned to the Naval Construction Force (NCF) or designated as Special Operating Units (SOU).

### **4-2.1 Maintenance Organization**

a. Organization. The organization of equipment maintenance shops varies in such areas as number and types of assigned equipment, number and experience of personnel, work hours, number of shifts, environmental conditions, and the activity's mission. The following organization is based on a typical Naval Mobile Construction Battalion (NMCB) operation, but the functions are applicable to small shops where one person may perform several functions.

b. Maintenance Supervisor. The Maintenance Supervisor is usually the senior mechanic assigned to an activity. The supervisor is responsible for the maintenance program for all assigned CESE and personally supervises the inspectors, cost control clerks, technical librarian, and parts expeditors. Some of the Maintenance Supervisor's responsibilities are to enforce all established maintenance policies, approve all repair actions prior to their accomplishment, approve all requisitions for procurement of Not In Stock (NIS) and Not Carried (NC) material, maintain the shop workload files, make all decisions that concern deadline CESE, control all CESE transfers and disposals, supervise the preventive maintenance program and live storage program, control all Construction Mechanics assigned to the unit and control shop tools and kits required to operate the shop. The Maintenance Supervisor shall initiate appropriate action when, during maintenance procedures, equipment abuse or misuse is suspected.

c. Shop Supervisor. Each maintenance section has a Shop Supervisor who is responsible for the quality of maintenance performed in the shop. A typical NMCB maintenance organization is divided into three sections: (1) Service Shop, (2) Repair Shop, (3) Support Shop. The Service Shop shall perform preventive maintenance and make minor repairs to CESE providing the repairs do not exceed one hour, or as scheduled by the Shop Supervisor if time permits. The Repair Shop Supervisor usually acts as the Field Maintenance Supervisor. The Repair Shop shall perform major repairs and make minor repairs to CESE providing the repairs exceed one hour. The Support Shops usually include facilities such as the Machine Shop, Tire Shop, Chassis/Body/Fender/Paint Shop, Steel and Radiator Shop, Battery Shop, and the Electric Shop.

d. Inspector. Inspectors examine equipment for needed repairs and services. Inspectors, who work directly for, and are responsible to, the Maintenance Supervisor, should be mechanics that are knowledgeable and proficient in their rating and able to describe clearly each repair action on the Equipment Repair Orders (ERO). All work must be listed. Each piece of equipment is inspected after the completion of repairs to ensure that the work is done correctly. Thorough final inspection increases



reliability and, in turn, reduces the mechanic's workload. Inspectors may perform minor repair work that pertains to inspection procedures only. Inspectors shall immediately notify the Maintenance Supervisor when suspected equipment abuse or recurring failures are discovered.

e. Cost Control Clerk. The Cost Control Clerk controls the Preventive Maintenance Program as directed by the Maintenance Supervisor. They should be a senior mechanic, knowledgeable in their rating and possess proficient administrative skills. They personally supervise the Preventive Maintenance Clerk and the Direct Turnover Clerk.

f. Preventive Maintenance Clerk. The Preventive Maintenance Clerk compiles all CESE into PM groups, prepares the PM schedule, and maintains the PM record cards with each vehicle's preventive maintenance history. The PM Clerk also controls EROs, maintains the ERO log, Equipment History Jackets, and is responsible for maintaining the Maintenance Office Equipment Status Boards.

g. Direct Turnover Clerk. The DTO Clerk maintains the maintenance shop's repair parts status and accountability records and is the liaison between the Supply Office and the shop. All requisitions for Not In Stock (NIS) and Not Carried (NC) material must pass through the DTO Clerk, who maintains the Direct Turnover (DTO) Log and the Repair Parts Summary Sheets. The DTO Clerk is responsible for the DTO parts and storage bins, and maintains the deadline file and the deadline status board.

h. Technical Librarian. The Technical Librarian, who should be an experienced mechanic, is responsible for the prepacked library, which contains operational, maintenance, and parts manuals as described in Chapter 5. The librarian establishes and enforces checkout procedures for all manuals and maintains all required reference materials needed to research and initiate part requisitions. The Technical Librarian usually researches and prepares the requisitions in accordance with Chapter 5, paragraph 5.5. This frees floor mechanics from administrative duties.

#### 4-2.2 **Maintenance Categories**

a. Maintenance Objectives. Maintenance keeps equipment in constant safe and serviceable condition at minimum cost, and detects and corrects minor deficiencies before they lead to costly repairs.

b. Maintenance Levels. The CESE Maintenance Program of the Naval Construction Force (NCF) and Special Operating Units (SOU) has three categories of maintenance: (1) organizational, (2) intermediate, and (3) depot. A unit's repair parts support is keyed to the authorized category of maintenance. The four levels of repair parts support that can be assigned are described in Chapter 5, paragraph 5.3.2.

(1) Organizational Maintenance. Organizational maintenance is the responsibility of the Equipment Operator, and scheduled preventive maintenance

services are performed by trained personnel (paragraphs (a) and (b) below). Organization maintenance consists of proper equipment operation, safety and serviceability inspections, lubrications, minor adjustments, and services. Usually, activities accomplishing only organizational maintenance are provided with "O" level repair parts support as described in Chapter 5, paragraph 5.3.2.

(a) Operator Maintenance. Every operator is to detect any malfunction and maintain his vehicle in clean, safe, and serviceable condition. Operator maintenance includes daily before, during, and after operation inspections, and lubrications and adjustments. Before, during, and after operation inspections and services are described in Chapter 2, paragraph 2.15.3.f.

(b) Preventive Maintenance. Preventive maintenance (PM) is scheduled to maximize equipment availability and minimize repair costs. Preventive maintenance consists of safety and serviceability inspections, lubrication, and minor services and adjustments, in addition to operator maintenance. Operators should participate in this work, as directed by the Maintenance Supervisor. Scheduling PM is described in paragraph 4-2.3.

(2) Intermediate Maintenance. Intermediate maintenance is the removal, replacement, repair, alteration, calibration, modification, rebuilding, and overhauling of assemblies, subassemblies, and components. These repairs are performed in a designated maintenance shop. Equipment which needs extensive or numerous assembly rebuilds require prior approval by higher authority. Maximum one-time repair costs (see Appendix F) are evaluated by the relationship of equipment age to equipment life expectancy. Because intermediate maintenance requires more skill than organizational maintenance, intermediate maintenance is authorized a larger assortment of repair parts, precision tools, and testing equipment. Usually, activity main bodies are provided "H" level repair parts support, and major detachments are provided "G" level support.

(3) Depot Maintenance. Depot maintenance is performed by designated maintenance activities to support organizational and intermediate maintenance activities that have more extensive shop facilities, equipment, and personnel of higher technical skills. Currently, NMCB authorized maintenance for CESE is performed under organization and intermediate levels only.

**NOTE: Amphibious Construction Battalions (PHIBCB) maintenance data for the SLWT (Side-Loadable Warping Tug), CSP (Causeway Section, Powered), and CSNP (Causeway Section, Nonpowered), ELCAS(M) (Elevated Causeway Modular) and ABLTS (Amphibious Bulk Liquid Transfer System) shall be performed and reported under 3M system, DoD Equipment Maintenance Program. Maintenance data for the ELCASNL (Elevated Causeway Navy Lighterage) and ABFHS (Amphibious Buoyant Fuel Hose System) remains reportable under this publication.**

#### 4-2.3 **Preventive Maintenance**

a. **Preventive Maintenance Program.** A dynamic preventive maintenance (PM) program reduces equipment downtime and disruption of work schedules caused by equipment failures. Proper PM scheduling maintains uniform and balanced shop workload and reduces the required work force. The scheduling system outlined herein is the minimum prescribed standard for PM of all USN-numbered and USNG-numbered equipment when operating under favorable conditions. The Maintenance Supervisor determines when equipment requires more frequent inspections. Inspections are critical for low-usage equipment such as equipment in a deadline or standby status. Once the activity's PM schedule has been established, the Maintenance Supervisor must authorize deviations. The standard interval between PMs for NCF equipment is 40 working days, based on a 5-day workweek, with services performed in accordance with manufacturer's recommendations and specifications.

b. **Preventive Maintenance Groups.** Preventive Maintenance groups are scheduling units in which all of an activity's equipment is evenly distributed. Each CESE item must be assigned to at least one PM group. The equipment should be evenly distributed throughout 40 PM groups so that a minimum number of similar items are out of service at any one time. Normal grouping should work like this: 1 of 10 dump trucks in the inventory should be assigned to every fourth PM group; 1 of 4 water distributors should be assigned to every tenth PM group. After the initial distribution, equipment should be redistributed to maintain an even shop workload on any workday.

Equipment should be grouped so that units that normally work together are scheduled for PM together; for example, semi trailers with truck tractors, and scrapers with tractors. Units should initially use 40 PM groups. After the system is established and operating, the Maintenance Supervisor should review its effectiveness and reduce time intervals if necessary.

The PM frequency can be increased by reducing the total number of groups or by assigning specific items of equipment to more than one group. For example, using Table 4-2-1, assume the following situation: a base taxi is assigned to PM group 30 and enters the shop for a scheduled PM on 11 April. Upon inspection, it is found that the taxi has accumulated more than the recommended miles since the last scheduled PM on 11 February. The Maintenance Supervisor would then reduce the interval between PMs by also assigning the taxi to PM group 10. Thus, the taxi receives the PM twice as often. However, suppose that in 20 working days, when the taxi enters the shop with PM group 10, it again has been used more than the recommended miles. The Maintenance Supervisor should reduce the interval again. This would be done by also adding the taxi to PM groups 20 and 40.

**NOTE:** *The dispatcher should notify the PM Clerk/Maintenance Supervisor if equipment is accumulating miles/hours quickly. As a result, the schedule can be adjusted as required, rather than waiting for equipment to exceed standards.*

c. Preventive Maintenance Due Date Schedule. A Preventive Maintenance Due Date Schedule (Table 4-2-1) shall be established annually by the PM Clerk because the schedules are based on the workdays in each calendar year. An NMCB PM schedule is set up using Operations (S3) Workday/Deployment schedule. The workdays on the schedule must correspond to the unit's actual workdays; for example, if you work a 6-day week, enter 6 days and omit holidays. The PM groups are numbered vertically down the first column. Table 4-2-1 depicts the standard 40 PM group concept. The dates of workdays in January are then listed consecutively in the January column. After January's last workday is entered, start February's workdays in the February column. At completion, the schedule shows each workday that each PM group is due for inspection. For example, Table 4-2-1 shows that PM group 5 is due on January 25, March 25, May 20, July 17, September 12, and November 7.

**PREVENTIVE MAINTENANCE INSPECTION SCHEDULE**

ACTIVITY _____												
YEAR _____												
PM SCHED. GROUP	MONTH AND DAY SCHEDULE											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	21		19		14		11		6		1	
2	22		20		15		12		9		4	
3	23		21		16		13		10		5	
4	24		22		17		14		11		6	
5	25		23		18		15		12		7	
6	26		24		19		16		13		8	
7	27		25		20		17		14		9	
8	28		26		21		18		15		10	
9	29		27		22		19		16		11	
10	30		28		23		20		17		12	
11	31	1	29	1	24		21		18		13	
12		2		2	25		22		19		14	
13		3		3	26		23		20		15	
14		4		4	27		24		21		16	
15		5		5	28	3	25		22		17	
16		6		6	29	4	26		23		18	
17		7		7	30		27	1	24		19	
18		8		8	31		28	2	25		20	
19		9		9			29	3	26		21	
20		10		10			30	4	27		22	
21		11		11			31	5	28		23	
22		12		12				6	29		24	
23		13		13				7	30		25	
24		14		14				8		1	26	
25		15		15				9		2	27	
26		16		16				10		3	28	
27		17		17				11		4	29	
28		18		18				12		5	30	
29		19		19				13		6	31	
30		20		20				14		7		1
31		21		21				15		8		2
32		22		22				16		9		3
33		23		23				17		10		4
34		24		24				18		11		5
35		25		25				19		12		6
36		26		26				20		13		7
37		27		27				21		14		8
38		28		28				22		15		9
39		29		29				23		16		10
40		30		30				24		17		11

Table 4-2-1.

d. Preventive Maintenance Record Cards. A *Vehicle/Construction Equipment Preventive Maintenance Record Card*, NAVFAC 11240/6 (Figure 4-2-2) shall be accurately maintained for each item of assigned equipment. PM record cards contain the vehicle's preventive maintenance history in chronological order and necessary information to assist the PM Clerk to prepare Equipment Repair Orders (ERO). PM cards shall be maintained in PM group sequence in a separate file. Equipment assigned to more than one PM group shall have dummy PM record cards filed in the extra PM group(s). The PM Clerk shall record the following information on the PM record card from the completed preventive maintenance EROs: type of PM service performed, date it was performed, cumulative miles/hours. Engine oil changes or filter changes shall be indicated by entering "O/C" or "F/C." PM record cards shall be returned to the Equipment History Jacket when the vehicle is transferred. The PM record cards are marked with a red tag to alert the PM clerk that attachments are listed on the back and need servicing.

ASSIGNED TO <b>Construction Projects</b>				PHONE <b>4865</b>	TYPE OF ASSIGNMENT <b>C</b>	EMPL CODE <b>485021</b>	JOB ORDER NO.	PM GROUP <b>5</b>
ISSUED <b>International</b>				MODEL <b>TD20</b>	TYPE <b>DOZER</b>	YEAR <b>1986</b>	EST. ORIGINAL MILES <b>500</b>	USE RES. NO. <b>48-12345</b>
TYPE PM	DATE	CUMULATIVE MILEAGE OR HRS. OPN.	MILES (OR HRS.) SINCE LAST PM	MILES (OR HRS.) REPORTED FOR S.M.D. PERIOD	TYPE PM	DATE	CUMULATIVE MILEAGE OR HRS. OPN.	MILES (OR HRS.) SINCE LAST PM
LAST A	1-8-87	1420	ENTRIES TRANSFERRED FROM PRIOR RECORD					
LAST B	12-10-87	1220						
LAST C	10-12-87	75						
A	3-6-87	1480						
B %	5-1-87	1540						

VEHICLE/CONSTRUCTION EQUIPMENT PM RECORD NAVFAC 11240/6 (2-78) Replaces NAVJOCKS 1980  
5/81 0105 LP 000-6020

Figure 4-2-2: Vehicle/Construction Equipment PM Record Card (NAVFAC 11240/6)

**NOTE: CESE Attachments.** The PM record cards on CESE that have Attachments are marked with a red tag to alert the PM Clerk that Attachments are listed on the back and require servicing.

e. Preventive Maintenance Inspection Depth. The Preventive maintenance scheduling explained in paragraph 4-2.3.c describes only PM frequencies; it does not determine the extent of the PM inspection. Preventive maintenance and services required shall be determined by an inspector, based on the manufacturer's recommendations and specifications.

(1) Deadline Inspection. The term "deadline" applies to any item of equipment that, in the opinion of the Maintenance Supervisor, parts cannot be obtained, or equipment cannot be safely operated within a period of 72 hours or more without endangering the operator or equipment performance. Inspections are critical on deadlined equipment to guard against further deterioration. The minimum deadline inspection shall ensure that all openings are covered and weather tight; machine surfaces are preserved; disassembled components are tagged, covered, and stored; no cannibalization has taken place since the last inspection; and equipment is cycled, if possible. If cycling is accomplished, re-preserve as needed.

**NOTE:** To fulfill an operational commitment, controlled parts interchange may be authorized only by the Maintenance Supervisor, provided all parts are replaced using the nonserviceable item,

replacements are promptly ordered, and all parts and labor cost related to the interchange are charged to the equipment on which the parts failed. The ERO authorizing installation of the new part on the deadline equipment must be annotated under work description "Replacement for a cannibalized part, no cost."

(2) Type A (01) Preventive Maintenance. Inspections are scheduled at intervals of 40 working days and shall be performed at each scheduled PM due date until a vehicle qualifies for a Type "B" preventive maintenance. To ensure that equipment does not deteriorate, these inspections are particularly critical on low-usage equipment, such as equipment in a standby status. Type "A" preventive maintenance consists mainly of safety and serviceability inspections and lubrication. They shall be performed by using the appropriate portions of Appendix K or L.

(3) Type B (02) Preventive Maintenance. Inspections shall be based on the equipment manufacturer's recommended maintenance interval for mileage/hour usage. A vehicle may undergo several Type "A" PMs before accumulating the required mileage/hours for a Type "B" PM. Deviations from the recommended interval, to more frequent intervals, shall be the decision of the Maintenance Supervisor based on extreme climate conditions, heavy dust conditions, and use of the equipment. They shall be performed by using the appropriate portions of Appendix K or L.

(4) Type C (03) Preventive Maintenance. Inspections shall be as directed by the Maintenance Supervisor, the Naval Facilities Expeditionary Logistics Center (NFELC) based on technical bulletins concerning safety of use, the responsible record holder, and/or Brigade Equipment Offices. Type "C" PM should be used to increase equipment safety and reliability and have no specified intervals.

#### 4-2.4 Equipment Repair Order

a. ERO Purpose. The *Equipment Repair Order* (ERO), NAVFAC Form 11200/41 (Figure 4-1-2), is used to specify, authorize, and control repairs to all NCF USN-numbered and USNG-numbered equipment. Use the *ERO Continuation Sheet*, NAVFAC Form 11200/41A, when the repair items to be performed exceed the space provided on the Equipment Repair Order. Because the ERO is designed to meet the needs of different users, only applicable blocks are to be filled in.

Each month all completed original copies of EROs or MOSS Program Computer Disks shall be forwarded by the NCF unit to their respective Brigade Equipment Office. SOUs submit their completed information to NFELC Port Hueneme Code 1574. Information inserted in the heavily outlined blocks is extracted and compiled; therefore, neatness, completeness, and accuracy of the information are imperative to provide historical cost and utilization data for each piece of CESE. This data provides a reliable source of information for budget planning, determining life expectancy, and predicting equipment and training requirements. The ERO flow is outlined in section 4-2.6.

# Equipment Repair Order (NAVFAC 11200/31A)

EQUIPMENT REPAIR ORDER (ERO) NAVFAC 11200/41 (Rev. 10 75) S/N 0100-LF 012 0206											
1. UEN ID NUMBER	2. EOP COST CODE	3. ACTIVITY UIC	4. JOB ORDER NUMBER	5. LOCATION ALCORANCE	6. TYPE REPAIR	7. HR METER READING	8. MILE METER READING	9. PRO NUMBER			
4813087	485001	N55000	PMG1	CB400	02	2617		AA000001			
					TIME		JULIAN DATE				
ESTIMATED HOURS	A. DIRECT LABOR	B. INSPECTION	C. INDIRECT LABOR	D. MATERIAL	E. TOTALS	A. EOP AVAILABLE	11,0,0	83,3,0,8	31.1 WAIT TIME		
ACTUAL HOURS	12.2	1.0	0.2	0.0,0,0,1.4		B. INSPECTION START	1,3,1,5	83,3,0,8	32.1 DIL TIME		
ESTIMATED COST						C. SHOP START	1,4,1,5	83,3,0,8	33.1 DIL TIME		
ACTUAL COST (WHOLE \$)				188		D. STOP FOR PARTS	0,9,3,0	83,3,1,0	34.1 DIL TIME		
35. ENGINE SERIAL NUMBER					36. CONTRACT NUMBER					37. PRIORITY	
TD20BPM510					79B3150						
38. CUSTOMER DATA					39. SHOP DATA					40. DESCRIPTION	
										TRACTOR CRAWLER	
41. ENGINE SERIAL NUMBER					42. CHASSIS SERIAL NUMBER					43. CHASSIS SERIAL NUMBER	
TD20BPM510					TD20BP4001					TD20BP4001	
44. FUNCTION CODE						45. MANHOURS		46. ESTIMATED MAT'L COST		47. MECH INITIALS	
48. WORK DESCRIPTION						49. PRI/SEC		50. ACTUAL		51. ESTIMATE	
49. FUNCTION CODE						50. PRI/SEC		51. ACTUAL		52. ESTIMATE	
1'2'X Steam Clean								4.0			
2'3'X Change Oil and Filters								1.0			
0'1'X Lube Complete								1.0			
0'4'X Change Fuel Filters								.5			
1'1'X Clean and Service Batteries								.6			
1'0'X Service Air Cleaners								.3			
Replace Rain Cap								on order			
F'5'5 Replace #6 Fuel Injector								1.8			
N'9'4 Adjust R/H Steering Brake								3.0			
SUB TOTALS								12.2			
RECEIPT OF ABOVE ORDER AND EQUIPMENT IS HEREBY ACKNOWLEDGED											
53. CONTRACTOR SIGNATURE SHOP SUPERVISOR						54. CONTRACTING FIRM				55. DATE ARRIVED	
PERMISSION TO EXCEED WORK ON ERO MUST BE AUTHORIZED BY REQUESTING ACTIVITY											
56. INSP CODE		57. INITIAL INSPECTOR (SIGNATURE)				58. DATE		59. INSP CODE		60. FINAL INSPECTOR (SIGNATURE)	
61. CUSTOMER APPROVAL (SIGNATURE)		62. ACT NAME		63. DATE		64. MAINTENANCE SUPERVISOR (SIGNATURE)		65. DATE		66. PAGE OF	

Figure 4-2-3.

b. ERO Design. The Equipment Repair Order form and Continuation Sheet are designed as a five-part multicolored snap set. The five ERO sheets are colored white ERO (W), blue ERO (B), green ERO (G), yellow ERO (Y), and pink ERO (P). The ERO (G) copy is for use by the Construction Equipment Department (CED) and is not currently required by the NCF and SOU. The Continuation Sheets are colored the same as the ERO and follow the same flow pattern.

c. ERO Usages. The Equipment Repair Order is the sole authority to perform work on CESE in the field or in the shop. An ERO is prepared for each specific piece of equipment each time labor (more than one hour) or materials are expended on any of the following types of work:

<u>Code for Block</u>	<u>Type of Repair</u>
01	Type "A" Preventive Maintenance
02	Type "B" Preventive Maintenance
03	Type "C" (03) Preventive Maintenance/ Annual Safety Inspection (ASI)
04	Interim Repairs
05	Overhaul
06	Repairs Performed in the Field (not PMs)
07	Receipt Inspections (Acceptance/BEEPs)
08	Repairs for Stock
09	Preservation of Equipment
10	Warranty
11	Rework
12	Accident
13	Shipping Inspection (CEMB only)
14	Surveillance Inspection (CEMB only)
15	Operational Test (CEMB only)

d. ERO Completion. Instructions to complete the ERO are detailed in Appendix H.

e. Job Control Number. The Job Control Number (JCN) consists of fourteen characters unbroken by hyphen or space. The first six characters are extracted from Block 3 of the ERO form (UIC and the appropriate Alpha service code prefix). The last eight characters are known as the Job Sequence Number and are extracted from the ERO Number block (upper right corner) of the ERO. This number is entered in Blocks 13, 14, and 15 of the NAVSUP Form 1250-1, as illustrated in Figure 4-2-4. Additional information can be found in Chapter 5, paragraph 5.6.2.



Figure 4-2-4. Job Control Number Entered on NAVSUP Form 1250-1

f. Equipment Downtime. Blocks 27 through 41 on the Equipment Repair Order downtime blocks (Figure 4-2-5) are used to determine the time the equipment is not available for dispatching (downtime) by recording events by time and date. A step-by-step example to complete Blocks 27 through 41 follows.

Example Situation: A vehicle has unusual engine noise during warm-up and is reported to the Dispatcher by returning the Hard Card. The Dispatcher has the vehicle parked on the shop working line and delivers the Hard Card to the PM clerk at 0730 on 10 October 1996. The Inspector workload was responsible for a 6-hour delay in starting inspection (1330). Initial inspection of the engine indicated a broken valve in No. 2 cylinder; a check at the parts storeroom indicated that the valves were not in stock (NIS). Further teardown and repair was delayed because of the shop workload. Upon receipt of the new valve at the parts storeroom (1100 hours on 17 October) and upon final teardown and removal of the head, it was found that the piston had been broken when the valve dropped into the cylinder. The piston was also NIS, so vehicle repairs were again delayed while waiting for parts. The necessary parts were received at 0900 on 28 October, and repairs were completed without further incidents.

#### Block

#### Entry

\*27/28 Equipment Available. Actual time (0730) and Julian Date (96283 for 10 October 1996). The Dispatcher notified the PM Clerk that the equipment was available to the shop.

\*29/30 Inspection Start. Time (1330) and Julian Date (96283). The actual vehicle inspection was started.

- 46/47 Shop Start. Actual time (1400) and Julian Date (96283). Mechanic started work on equipment. If .5 is entered in Block 14 for inspection time, actual work cannot start prior to that amount of time being expended. Example: Block 29 time 1315; Block 14 inspection hours 1.0; work cannot start prior to 1415.
- 32/33 Stop for Parts. Mechanic stopped work at 1415 on 96283 because parts were not available. Use only when all work on equipment must stop due to lack of parts/material.
- 34/35 Parts Available. At 1100 on 17 October (96290) the needed repair parts were available at the parts storeroom. Therefore, delay is no longer attributable to lack of parts (down for supplies) ((DFS)). Repairs should commence as soon as possible.
- 36/37 Stop for Parts. Mechanic stopped work at 1600 on 96290 because parts were again not available. Use only when all work on equipment must stop due to lack of parts/material for second time.
- 38/39 Parts Available. At 0900 on 28 October (96301) the repair parts were available at the parts storeroom and work commenced immediately.
- \*40/41 Completed. At 1645 on 28 October work was completed. The Dispatcher is notified that the vehicle is ready for service by asking the Dispatcher to sign Block 77, "Customer Approval," and then the time and Julian Date is entered.

	TIME	JULIAN DATE
A. EQPT AVAILABLE	<sup>27</sup> 0 7 3 0	<sup>28</sup> 9 4 2 8 3
B. INSPECTION START	<sup>29</sup> 1 3 3 0	<sup>30</sup> 9 4 2 8 3
C. SHOP START	<sup>40</sup> 1 4 0 0	<sup>47</sup> 9 4 2 8 3
D. STOP FOR PARTS	<sup>32</sup> 1 4 1 5	<sup>33</sup> 9 4 2 8 3
E. PARTS AVAILABLE	<sup>34</sup> 1 1 0 0	<sup>35</sup> 9 4 2 9 0
F. STOP FOR PARTS	<sup>36</sup> 1 6 0 0	<sup>37</sup> 9 4 2 9 0
G. PARTS AVAILABLE	<sup>38</sup> 0 9 0 0	<sup>39</sup> 9 4 3 0 1
H. COMPLETED	<sup>40</sup> 1 6 4 5	<sup>41</sup> 9 4 3 0 1

Figure 4-2-5. Equipment Repair Order Downtime Blocks

g. Equipment History Jacket. An Equipment History Jacket shall be maintained for each USN numbered item of CESE and each USNG-numbered ISO container. The History Jacket shall contain the respective vehicle's pertinent descriptive data and maintenance history. The descriptive data includes the appropriate DoD

*Property Record*, DD Form 1342, and *Equipment Attachment Registration Records*, NAVFAC Form 6-11200/45, if applicable. The maintenance history includes the completed *PM Record Cards*, NAVFAC Form 11240/6, and blue copies, ERO (B), of completed Equipment Repair Orders or computer-generated equivalent. When a vehicle is transferred, the current PM Record Card shall be removed from the PM group file and returned to the History Jacket. The jacket shall then be either hand carried or forwarded by certified mail to the receiving custodian. When a vehicle is transferred to a Property Disposal Office (PDO), the History Jacket shall accompany it. All units that receive equipment by direct delivery from the manufacturer are required to establish the initial Equipment History Jacket.

h. Equipment Repair Order (ERO) Work Sheet. The ERO work sheet is a single copy sheet and is used to document repair parts used.

#### 4-2.5 **Maintenance Program Evaluation**

a. Maintenance Guidelines. An activity's maintenance program should be continually evaluated to ensure that it is effective. Guidelines and tools for program evaluation that the Maintenance Supervisor may use are listed below.

(1) Mechanic-to-Equipment Ratio. The ratio indicates the number of mechanics assigned compared to the number of vehicles assigned to a location. In addition to all the mechanics assigned to the shop, the title "mechanic" in this ratio includes all administrative and supervisory maintenance personnel and any personnel assigned to work with the mechanics, such as steelworkers, machinery repairmen, and electricians. The ratios can be used as a general yardstick to determine if additional mechanics may be required to maintain the unit's equipment adequately. Obviously many factors such as training, experience, environment, and equipment condition shall cause the optimum ratio to vary. However, experience shows that the ratio should average approximately one mechanic to five pieces of equipment at each location. One way to improve the on-site mechanic to equipment ratio is through the use of the live storage program (see Appendix N).

(2) PM-to-Repair Ratio. This ratio shows the number of scheduled maintenance actions performed compared to unscheduled maintenance actions (interim repairs). The ratio can be used as a primary indicator of the effectiveness of a unit's preventive maintenance program. The PM Clerk can compute the PM-to-repair ratio from the ERO log. Ideally there should be many more PMs performed than interim repairs. Experience indicates that a unit, operating on a 40-day PM schedule, should average approximately three scheduled PM inspections to each interim repair: a ratio of three to one. If the ratio drops below three to one, the preventive maintenance program should be reviewed for the following problems: inadequate scheduling, not adhering to the schedule, not performing the proper depth of PM, and inadequate shop quality control. The closer the ratio comes to one to one, the more ineffective the PM program becomes.

(3) Equipment Availability. Equipment availability is the percentage that shows the time the equipment is available to be dispatched as compared to downtime. Equipment downtime is figured on a 24-hour, 7-day-week basis. Equipment availability of a unit at 90 percent is considered excellent, 85 percent is good, 80 percent is fair, and 75 percent is poor. Equipment with a fair availability record should be analyzed to determine the cause, such as overwork or abuse, supply support, or shortage of mechanics.

b. Maintenance Schedule. Ensure that all vehicles receive maintenance. If the shop is on a 40-day PM schedule each vehicle should receive maintenance about once every 8 weeks. Frequently check to ensure that all vehicles are on the PM schedule and that the schedule is being followed.

If the vehicle is returned to the shop too soon after it has been worked on, compare the completion date of the first ERO with the available date of the next ERO when the vehicle is returned to the shop. If the time between returns is short, compare the meter reading (how much was the vehicle used).

If two or three consecutive interim repairs have been performed, it is possible that the PM frequency for the vehicle should be increased. As CESE gets older, good PMs help keep the vehicle up or allow the parts to be ordered before they actually fail. Frequent interim repairs can also mean poor shop quality control, operator equipment abuse, a deficiency in inspection procedures, and a need for additional training.

If vehicles are in for interim repairs and come back in a few days for a PM, the shop is doing unnecessary work. If a vehicle enters the shop for an interim repair within 5 working days of a scheduled PM due date, the PM should be performed. This saves inspection time and keeps the shop from processing an additional ERO. This also increases equipment availability.

(1) Shop Maintenance Efficiency. Compare the Down-for-Maintenance (DFM) time with the actual labor hours expended, and if the times are correctly recorded in the downtime block (Figure 4-2-3), a good average is three times longer in the shop than time being worked on. If the shop is much above the ratio, either Down-for-Supply (DFS) time is not correctly reported, the shop is short of mechanics, or it is inefficient. If the ratio is around one to one, either the shop is "super" efficient or it is not reporting downtime correctly. Shop efficiency is also indicated by the amount of wait time shown on the Equipment Repair Order. Excessive wait time adversely affects the DFM time and equipment availability. The person who initiates the ERO enters in Blocks 27 and 28 the time and date the Hard Card is received by the shop. The Inspector then enters the time and date in Blocks 29 and 30 when work is started on the vehicle. The time a vehicle waits between the inspector and the mechanic is charged as DFM time.

(2) Mechanics Labor Scheduling Efficiency. The ERO can be used to determine how efficiently the mechanics labor is being managed by using the following method:

(a) Compare actual labor hours used with labor hours available. Labor hours available can be computed by taking the average number of floor mechanics and inspectors multiplied by their average hours worked per month. For this comparison, count only those people whose time should be entered on the EROs and use only actual working time.

(b) Compare hours available with the total actual labor hours reported on the month's EROs. Obviously, all of the worker's time is not going to be reported; however, most should have been reported.

(3) CESE Maintenance Cost Check. The ERO should be used to check on the use of the unit's CESE maintenance money. To do this, compare the total cost listed on the month's ERO with the actual funds reported by Supply. For several reasons these totals shall not be equal. However, if there is a wide variance, a check should be made. Notice where parts are installed without being reported on an ERO: DTO bins full of parts (bought but never installed), and non-maintenance items charged to your account by mistake.

(4) Supply Response Time Check. The ERO provides an indication of supply response time. If the ERO shows more Down-for-Supply (DFS) time than Down-for Maintenance (DFM) time, check to ensure that the correct Urgency-of-Need-Designator (UND) priority is used. If the ERO shows little or no DFS time, the shop is either performing extremely well or is not completing the downtime blocks properly. To verify this, check the EROs. All EROs for deadline vehicles should have a "stop-for-parts" time entered in Blocks 32 and 33. If these blocks do not have entries, the ERO is still adding up maintenance hours.

(5) Maintenance Evaluation Guide

(a) Is an ERO used for all work in the equipment repair shop? (Not required if repair can be done in less than one hour with no repair parts.)

(b) Are EROs reviewed and work authorized by maintenance supervisor prior to commencement of work?

(c) Are all decisions to deadline equipment made by maintenance supervisor?

- (d) Are formal ordering documents used to purchase spare parts?
- (e) Are all pertinent publications that concern equipment maintenance available, such as NAVFAC P-300 and Technical Bulletins, and are they being followed?
- (f) Are legible copies of EROs being forwarded to NFELC/Brigade monthly as per NAVFAC P-300, Chapter 4, Section 2?
- (g) Is deadlined equipment being cycled, inspected, preserved, and protected from parts cannibalization?
- (h) Are PM record cards used and is all up-to-date information entered in accordance with NAVFAC P-300?
- (i) Is a system in effect for inventory and maintenance of mechanic's tool kits?
- (j) Are maintenance shops' cleanliness and safety conditions correctly maintained? Are jack stands or blocks used, fire extinguishers available, floor clean of accumulated grease, oil, and discarded parts? Are hand tools properly maintained and power tools grounded?
- (k) Do EROs reflect realistic actual man-hours and downtime for maintenance and major repairs? If downtime is excessive, does the problem lie in maintenance or supply?
- (l) Are spare parts stored properly?
- (m) Are maintenance personnel familiar with contents of NAVFAC P-300?
- (n) Are organizational and equipment status boards maintained?
- (o) Are direct turnover parts maintained according to NAVFAC P-300, Chapter 5, paragraph 5.7, and are they being installed at first PM after receipt?
- (p) Is a good inspection program being used before and after repairs?

c. Equipment Condition Codes. The appearance of CESE is a quick indicator of the care it receives. Clean equipment is more likely to be well cared for and mechanical problems easier to identify. The condition of CESE can be categorized with condition codes. Coding shall be in accordance with DoD Regulation 4160.21, *Defense Disposal Manual*, chapter 1, and NAVCOMPT Manual, *Activity Unit Identification Code*, section 036206. The code is composed of two characters: (1) an alpha Supply Condition Code, and (2) an alpha numeric Disposal Condition Code. The first position determines serviceability and is coded with an "A," "F," "G," or "S." The second position determines relative condition or degree of serviceability and is coded with "1" thru "6" for serviceability Code "A;" with a "7" thru "9" for serviceability Code "F" or "G;" and an "X" or "S" for serviceability Code "S." Refer to Appendix I for description of condition codes.

The following is a complete list of the possible codes with a brief description.

<u>Code</u>	<u>Description</u>
A1	Serviceable/Unused-Good
A2	Serviceable/Unused-Fair
A3	Serviceable/Unused-Poor
A4	Serviceable/Used-Good
A5	Serviceable/Used-Fair
A6	Serviceable/Used-Poor
F7	Unserviceable Repairable/Repairs Required-Good
F8	Unserviceable Repairable/Repairs Required-Fair
F9	Unserviceable Repairable/Repairs Required-Poor
G7	Unserviceable Incomplete/Repairs Required-Good
G8	Unserviceable Incomplete/Repairs Required-Fair
G9	Unserviceable Incomplete/Repairs Required-Poor
SX	Unserviceable Scrap/Salvage
SS	Unserviceable Scrap/Scrap

4-2.6 Equipment Repair Order Flow. This section provides the ERO and single-line item consumption document NAVSUP 1250-10 internal flow and distribution. Specific steps are noted.

**STEP 1: PREVENTIVE MAINTENANCE CLERK.** Initiates ERO completing blocks 1, 2, 3, 4, 5, 6, 27, 28, 44, 48, 49, 50, 51, 53, 55, 56, 61, and enters next ERO number from ERO log in ERO number block. Enter all information from ERO in log. Attach hard card to ERO and pass to Direct Turnover/Cost Control Clerk.

**NOTE:** *Ensure all EROs for field crew are coded 06, in block 6, for all repairs made in the field.*

**STEP 2: DIRECT TURNOVER/COST CONTROL CLERK.** Will research DTO Log and Summary Sheet. Fill out DTO Information Sheet (see Figure 5-3) and attach it to ERO.

Research history jackets for work deferred and enter on the DTO Information Sheet. If complete 1250-1s are attached from Collateral, enter work description in block 63 and "On Order" in block 66. Have Maintenance Supervisor sign 1250-1s into Repair Parts Custodian. Pass ERO to the Initial Inspector.

**STEP 3: INITIAL INSPECTOR.** Enter all previous work deferred off to DTO Information Sheet in block 63 of ERO. Complete blocks 7, 8, 14, 29, 30, 45, 63, 72, and 73, and blocks 54 and 82 when applicable. Pass ERO to Maintenance Supervisor for signature.

**NOTE:** *When utilizing SAMMS EM, pass ERO package to Preventive Maintenance Clerk for completed entry and print.*

**STEP 4: MAINTENANCE SUPERVISOR.** Will ensure that ERO and package is properly completed and that work description is clear and concise. If everything is OK, and work described is authorized to be started, sign block 80 and date block 81. Pass ERO and completed package to the appropriate shop.

**NOTE (1):** *Ensure an 06 ERO is made out for all Intern repairs made by field crew that exceed one hour.*

**NOTE (2):** *All PMs performed by field crew will remain 01 or 02.*

## **STEP 5**

**SERVICE OR REPAIR SHOP SUPERVISOR.** Will review work descriptions and schedule equipment into shop. If OK, sign block 68. When work can be assigned to a mechanic, complete blocks 46 and 47, remove green copy of ERO and worksheet and return them to protective folder. Shop Supervisor will retain as remaining copies of ERO. Issues DTO parts at this time. Before signing NAVSUP Form 1250-1s for repair parts, Shop Supervisor will ensure that equipment cannot be repaired without those parts. Only the Shop Supervisor or his assistant sign NAVSUP Form 1250-1s.

**STEP 6: MECHANIC.** If additional parts are required to accomplish repairs, he will notify the Shop Supervisor of the parts needed. (Shop Supervisor will then task the Technical Libraries to research the parts and fill out a NAVSUP Form 12501 or 2. Obtain Shop Supervisor's signature on the NAVSUP Form 12501 or 2 and issue repair parts to the mechanic. Obtain receipt signature of mechanic). Mechanic will complete all possible work listed in block 63 and enter hours and or tenths of hours expended on the item of repair in block 65. He will initial and enter his rate for each repair made in block 67. When all possible work has been completed and all appropriate blocks on the ERO have been filled in, pass complete package containing green copy of ERO and worksheet back to Shop Supervisor. At this time the mechanic with clean hands, will initial and enter his rate on the white copy of the ERO for work performed.

**STEP 7: SHOP SUPERVISOR.** Upon receipt of mechanic's ERO, worksheet and initials on white ERO copy, the Shop Supervisor will inspect equipment to ensure that



all repair parts bought, manufactured or used from other equipment has been entered on worksheet. (All work to be deferred will be initialed by the Maintenance Supervisor). If unit is to be deadlined, ensure blocks 40 and 41 are completed. Then recount all parts numbers, prices and quantities for repair parts and petroleum used, on ERO worksheet. Forward completed paperwork package to Final Inspector and unit to the final inspection line.

**NOTE:** *If repair parts required are NC/NIS and all efforts and means available have been expended, fill in "stop for parts" section of ERO and immediately hand-carry completed ERO package containing the NC/NIS NAVSUP Form 1250/1-2s for the part or parts that deadlined the equipment to the Maintenance Supervisor. Move unit to deadline area and preserve for deadline in accordance with COMSECONDNCR/COMTHIRDNCR Instruction 11200.1 series.*

**STEP 8: FINAL INSPECTION.** Will perform prestart inspection. Before operating, makes visual inspection to ensure all repairs were properly made. Operate unit for 15 minutes after normal temperature has been reached to ensure dependability. If unit is OK, leave it at Dispatch, along with hard card and obtain Dispatcher's signature in block 77. Date block 79. Inspector will sign block 75 and date block 76.

**NOTE (1):** *At this time, the Final Inspector will enter total time for the final inspection in block 15 of green copy of ERO only. Forward package to Cost Control.*

**NOTE (2):** *For SAMMS, EM pass ERO package to Preventive Maintenance Clerk for final print.*

**STEP 9: MAINTENANCE SUPERVISOR.** Will review complete ERO package to ensure all repairs and paperwork were properly completed. He will sign all NAVSUP Form 1250-1/-2s for DTO (NC/NIS) and will indicate priority in block 3 of 1250-1/-2. Ensure that block 10 (APL NO.) of NAVSUP Form 1250-1/-2 contains proper ERO number in blocks 14 and 15 (WC and USN). Forward complete ERO package to DTO/Cost Control. If unit is deadlined, see Step 9 Note.

**NOTE:** *As soon as deadlined unit's ERO package arrives from Shop Supervisor, ensure that unit cannot return to service. If not, immediately sign NC/NIS NAVSUP Form 1250-1/-2s and assign priority in block 3. Forward complete package to DTO/Cost Control Clerk. Time elapsed for NAVSUP Form 1250-1/-2 processing and turning into repair parts for ordering should not exceed one hour from time entered to "stop for parts" block on deadlined ERO. If unit to be deadlined has 01 or 02 ERO (PM), defer the item that disabled the unit and immediately open an 04 (interim repair) ERO, complete all blocks except 15, 16, 25, 75, and 76. Enter the item that disabled the unit in block 63.*

**STEP 10: DIRECT TURNOVER/COST CONTROL CLERK.** Will take all signed (but not processed NC/NIS) DTO chits and log them in, see step 3 of DTO Flow Chart. (At this time, have PM record clerk log ERO in (date and time) and record all PM information on PM Record Card and close out in the computer). Cost Control Clerk will continue with blocks 13, 15, 16, and 25. See paragraph 3301 for block-by-block instructions on filling in all blocks of ERO. On the back of ERO (W) and continuation (W) circle each functional code from block 45 only, on work that was actually completed. Pass to Maintenance Supervisor for final review. If units are deadlined, see Step 10 Note.

**NOTE:** When NC/NIS NAVSUP Form 1250-1/-2 and ERO package is received from Maintenance Supervisor for unit to be deadlined, immediately check to see if the ERO is a PM. If it is, immediately close out the PM ERO and open an 04 (interim). Ensure that NAVSUP Form 1250-1/-2 contains the 04 ERO number in blocks 14 and 15, and not the PM ERO number. When this is done, log the NAVSUP Form 1250-1/-2 in the DTO Log, and then check the DTO procedures (flow chart), Figure 5-3 for details. Ensure that all blocks, except 15, 16, 25, 75, and 76 on ERO are completed. Ensure “stop for parts” time and dates (blocks 32 and 33) are completed and accurate. Enter equipment on deadline status board. File complete ERO in history jacket. Move history jacket to deadline file.

**STEP 11: MAINTENANCE SUPERVISOR.** Will review all portions of ERO to ensure all summaries were completed accurately. Compare work description in Block 63 to ERO worksheet. If ERO (W) and (H) copies and ERO worksheets are completed neatly and accurately. Forward package to PM record clerk for filing and mailing. If there are mistakes, pass it back to Cost Control Clerk for correcting.

**STEP 12: PREVENTIVE MAINTENANCE CLERK.** After Maintenance Supervisor has made his final review of the EROs, pull blue copies of the ERO, continuation sheet, and ERO worksheet and file in history jacket. Forward all white copies of ERO and continuation sheet to:

Civil Engineer Support Office  
Attn 1542R  
Naval Facilities Expeditionary Logistics Center  
1000 23<sup>rd</sup> Avenue, Bldg 1443  
Port Hueneme, CA 93043-4301

Send via serialized cover letter or e-mail monthly.

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## **CHAPTER 5. EQUIPMENT SUPPORT** **FOR NAVAL CONSTRUCTION FORCE AND** **SPECIAL OPERATING UNITS**

**NOTE:** This chapter applies only to the Naval Construction Force and Special Operating Units.

### **5.1 Logistic Support**

**5.1.1 Supply Support.** The Navy Supply System is tasked to support all Naval Forces. The Supply System's basic functions include identification of requirements; procurement to meet demands; storage, stocking, and maintenance of inventory; requisitioning, issue, and shipment of needed items; and disposition of excess or unusable assets. The Supply System uses Inventory Managers to centralize procurement and management of material. These Inventory Managers ensure that there is proper balance between requirements and National Stock Number (NSN) material assets. The Inventory Manager for each NSN can be identified by cognizance symbols which precede the stock number. For example, NAVFACENGCOM manages all "2C" cognizance equipment, such as Civil Engineer Support Equipment (CESE), and ISO Containers.

**5.1.2 NNFELC Port Hueneme Support.** Naval Facilities Expeditionary Logistics Centers (NNFELC) are the main sources of supply support for most Naval Construction Force (NCF) units. In addition, NNFELCs perform most of CESE shipping and overhauling for the NCF. A complete range of initial outfitting repair parts and peacetime operating stocks is maintained at the NNFELC under the support criteria outlined in paragraph 5.2.1. When an NNFELC prepares a new unit allowance for the first time, the repair parts are assembled and packaged into reusable mount-out boxes for shipping. This initial allowance is procured by NAVFACENGCOM using Other Procurement Navy (OPN) funds. The NNFELCs are normally responsible for follow-on equipment support while deployed. The unit submits its requirements to the NNFELC, which shall meet the need from supply stock or initiate local procurement/referral action. This routine procurement of replacement repair parts is funded from Operation and Maintenance, Navy (O&MN) funds controlled by the respective allowance holder.

**5.1.3 Coordination with Unit Supply.** Maintenance personnel expect repair parts to be available when requested. However, Supply cannot satisfactorily perform its support mission without coordination and cooperation between Maintenance and Supply. Maintenance personnel should understand the "repair" parts supply system and the Maintenance Supervisor should develop an information exchange. At least one mechanic should be assigned to the repair parts storeroom to provide service at the parts counter. The mechanic can also assist storeroom personnel to identify unknown items and provide parts interchangeability data. The Maintenance Supervisor should designate one person, normally the Cost Control Clerk, to provide liaison with supply to check requisition status. Consolidated Seabee Allowance Lists (COSAL) are designed

to provide support for new or like new equipment for 60 days or 1200 hours. The Maintenance Supervisor must help determine requirements for additional repair parts.

## **5.2. Table of Allowance (TOA)**

**5.2.1 Purpose.** The TOA identifies and quantifies the basic personnel, material, and equipment for the performance of the unit's mission(s) in contingency, wartime, and disaster recovery operations. The TOA is designed to sustain construction operations for 60 days without resupply, except that ammunition is limited to 15 days, subsistence rations are limited to five days, and fuel limit is three days.

**5.2.2 Authority and Responsibility.** Commands with authority and responsibility for TOAs are as follows:

a. The Chief of Naval Operations (CNO OP-44) formulates the doctrine and policy for all Naval Construction Force (NCF) units and approves all NCF Tables of Allowance and any changes that impact on the unit's mission.

b. The Chief of Civil Engineers (COMNAVFACENGCOM) advises OP-44 in TOA matters that concern mission and state-of-the-art technological advances.

c. Fleet Commanders, Naval Construction Battalions, Atlantic and Pacific Fleets (COMSECONDNCB/COMTHIRDNCB).

d. The Naval Facilities Expeditionary Logistics Center (NFELC) is the system manager that maintains NCF Tables of Allowance, develops a new allowance as directed by COMNAVFACENGCOM, and collects field recommendations for revisions to TOAs.

**5.2.3 General TOA Information.** The NCF Tables of Allowance provide personnel, material, and equipment to enable the unit to carry out operational requirements. Since the unit is expected to build any number of different facilities in any climatic condition, judicious selection of items is necessary to prevent the allowance from reaching excessive proportions. A compromise must be reached that balances bulk against capability. The NCF Tables of Allowance represent the best selection to provide general construction capability, but they are not all inclusive. They are not, nor should they be, capable of meeting every conceivable operational requirement. When an assigned project requires tools or equipment in excess of the unit's capability, the allowance is supplemented by augmentation. Augment tools, equipment, and personnel may come from the Naval Construction Force Support Unit (NCFSU), or may be provided by the responsible fleet or operational commander.

**5.2.4 TOA Organization.** Individual line items of material and equipment are identified by stock number: either National Stock Number (NSN) or Navy Item Control Number (NICN). Stock numbers for Civil Engineer Support Equipment (CESE) are

listed within the Equipment Codes (EC). Other stock numbers are assembled within functional Assemblies. Assemblies are grouped functionally into either Groups or Facilities. Groups and Facilities are segregated by major category or material into Sections, and by purpose into Echelons, within the NCF Tables of Allowance and the Advanced Base Functional Component (ABFC) System components.

a. The ABFC Component and NCF Tables of Allowance. An ABFC Component and NCF Tables of Allowance are designed for personnel, material, and equipment required to perform specific taskings delineated in OPNAVINST 5450.46, *Doctrine and Policy Governing U.S. Naval Mobile Construction Battalions*. Components and TOAs are given names to indicate their functions, and unclassified codes that consist of letter (alpha) and number (numeric) combinations. For example: A Naval Mobile Construction Battalion (NMCB) in the NCF Tables of Allowance system is designated "P-25," and has an ABFC counterpart designated "P-25." The NCFSU Table of Allowance is designated "P-31," and has an ABFC counterpart "P-31."

b. Echelons. In both contingency and day-to-day operations, an NCF unit may be required to support, simultaneously, multiple projects and tasks in various locations. Preplanning for such contingencies and management of resources required to support these operations are aided by "echeloning" certain TOAs. For example: The NMCB Table of Allowance is echeloned into an Air Detachment, an Air Echelon, and a Sea Echelon. This echeloning is based on anticipated prioritization of personnel, material, and equipment, and the availability of airlift versus sealift support. The NCFSU Table of Allowance is echeloned to augment and support various special operations which are beyond the organic capability of the NMCBs.

**5.2.5 Allowance Review.** The Naval Facilities Engineering Command (NAVFACENGCOM) and the Naval Facilities Expeditionary Logistics Center (NFELC) shall initiate a complete annual review of each TOA by inviting comments and participation from all Commands that have an interest in the TOA under review.

**5.2.6 Initiating TOA Changes.** All changes to TOAs managed by NAVFACENGCOM shall be initiated in accordance with NAVFACINST 4423.1, Modification and Documentation of Naval Facilities Engineering Command Managed Tables of Allowance.

a. Format. The NAVSUP Form 1220-2, Allowance Change Request/Report, or a formal letter are the prescribed documents to request item addition/deletion, or quantity increase/decrease in all published allowance lists. Submit justification for each suggested allowance modification.

b. Justification. Justification for changes shall be based on one or more of the following:

(1) Mission Capability Improvement. Shall the proposed change improve the capability to perform assigned mission? Quantitative estimates of increases in construction quality, productivity, or readiness shall be made. Proposed changes which result from changes in a unit's mission shall be specifically identified.

(2) Cost Effectiveness. Does the proposed change lead to a reduction in material or labor costs or in the cost of the allowance itself? Include a brief cost comparison.

(3) Safety. Shall the proposed change result in a safer operation?

(4) Other. Shall the proposed change result in a nonquantitative improvement such as improved health, comfort, or morale?

c. Submittal. Recommendations that involve changes to authorized TOAs shall be submitted to Commanding Officer, Code 15, Naval Facilities Expeditionary Logistics Center, 1000 23rd Avenue, Bldg 1000, Port Hueneme, California 93043-4410. After NFELC's research and evaluation, the Allowance Change Request (ACR) is forwarded to the appropriate chain of command (COMSECONDNCB/COMTHIRDNCB) for endorsement to COMNAVFACENGCOM Code SR.

**5.2.7 National Stock Number (NSN) Breakdown of Sets, Kits, Outfits (SKO).** Within the NCF Tables of Allowance there could be several hundred NSNs listed under a single SKO NSN. Each of these NSNs may contain several items not individually listed or cataloged in the TOA. For example: a mechanic's phillips screwdriver set, NSN 5120-00-104-0005, consists of five separate items. For inventory and resupply, NFELC maintains and distributes an inventory aid catalog entitled *National Stock Number Breakdown of Sets, Kits, and Outfits Inventory Aid Catalog*. This SKO catalog provides the custodian with a pictorial display of a set, kit, or outfit with the means to identify all included items. Selecting only those missing items should preclude the purchase of complete sets when only one or two items are needed.

**5.2.8 Master Packing Plan (MPP).** The MPP is a general guide for the standardized pack up of NCF TOA in ISO storage and shipping containers. Each TOA pack up has some unique variances due to different dimensions of materials, deferred items, or availability of suitable substitutes. The Master Packing Plan organizes the materials within the various echelons. Facility/Group components are packed together in bulk containers. Configured containers with cabinetry store materials together within common groups and assemblies such as the Central Store Room and the Armory. Other specialized containers are Half-Heights for drums of Petroleum, Oils, and Lubricants (POL) and Flat Racks for lumber and pipe. Special handling of hazardous and shelf life materials is required and deferred from the initial pack ups until the TOA is readied for mobilization. The location system in the MPP identifies each line item within the TOA (NSN and quantity) by container and position inside the container, and provides designated locations for deferred and short materials.

### 5.3 **Repair Parts Support**

5.3.1 **Support Criteria.** In the NCF a wide range of CESE is used. Because of the different design characteristics of each of these CESE items, different repair parts are required to meet the support requirements. The NCF initial outfitting repair parts is designed to support new or like-new CESE for the first 1,200 construction hours and is computed as two 10-hour shifts, seven days per week, for the first 60 days of deployment.

a. **Allowance Parts List.** The initial outfitting of repair parts is designed so that each CESE item has a list of parts -- an Allowance Parts List (APL). From this data a publication called a Consolidated Seabee Allowance List (COSAL) is prepared and distributed to the NCF unit being supported, plus one copy to the requesting Command and one copy to the Naval Facilities Expeditionary Logistics Center. The Naval Facilities Expeditionary Logistics Center (NNFELC) draws the required initial outfitting parts peculiar, called Modifier Code 98 kit, and parts common, called Modifier Code 96 kit and Modifier Code 97 kit, and packages and ships the parts to the unit. Note that in correspondence the Consolidated Parts List is referred to as the COSAL, the repair parts peculiar as the Mod 98, and the repair parts common as the Mod 96 and Mod 97.

b. **Special Operating Units (SOU) New Receipts.** SOUs shall receive initial parts support for new receipts upon submission of the DD Form 1342, *DoD Property Record*, to NFECLC Code 1575. Stock replenishment thereafter is the user's responsibility.

5.3.2 **Levels of Support.** Each repair part listed on an APL is assigned a three-digit maintenance code that identifies one of four levels of support: "O," "G," "H," or "D." The first digit is the lowest maintenance level authorized to remove the item. The second digit indicates the lowest maintenance level authorized to repair the item. The third digit indicates the lowest maintenance level authorized to dispose of the item.

#### **Level of Support and definitions**

Level O: Major detachments with a maintenance capability, as defined in Chapter 4, paragraph 4-2.2.b

Level G: Major detachments with an intermediate level maintenance capability

Level H: Main bodies with an intermediate maintenance capability, as defined in Chapter 4, paragraph 4-2.2.b(2)

Level D: Depot level maintenance, not currently used by the NCF

**NOTE:** Each higher level of support includes all lower levels. For example, "H" level includes "O" and "G" level items. When the second digit is "Z" the item is nonrepairable and should be condemned and disposed of at the level indicated in the first position maintenance code column.



5.3.3 **COSAL Arrangement.** Each COSAL is arranged and divided into three separate parts.

a. **Part I. Cross Reference List.** Part I consists of three equipment cross reference lists used to determine which APL (allowance parts list) applies to which USN Number, but they are sorted and printed in different sequences. Section A is printed in USN registration number sequence; Section B is in EC (equipment code) sequence; and Section C is in APL sequence.

b. **Part II. Allowance Parts List.** Part II consists of APLs arranged in identification number sequence. The APL identification number is listed in both the upper and lower right corner of each APL page and consists of nine digits, such as 950004121.

The Part II MAJOR SEQUENCE is based on the last four digits (95000**4121**) of the APL identification number (low to high), which are commonly referred to as the APL number. Normally, one APL number covers the complete vehicle. Exceptions are vehicles such as truck-mounted water distributors (one APL for the truck and another APL for the distributor), and mobile cranes (one APL for the carrier and another APL for the crane).

The Part II MINOR SEQUENCE is based on the preceding three digits, such as 95**006**4121 for the fuel system group items. A list of groups covered in each APL is displayed on the first page of each APL, such as **95006**4121. The first two digits of the APL number (**95**0044121) are consistent in Naval Construction Force COSALs because they identify the APL as NCF versus shipboard.

c. **Part III. Stock Number Sequence List.** Part III consists of a Stock Number Sequence List (SNSL) and two repair part cross reference lists. The SNSL lists the COSAL provided repair parts arranged in National Item Identification Number (NIIN) sequence in the COSAL, to support a specified level of maintenance. The SNSL also lists the APL numbers each part is stocked for, the unit price, and the total COSAL quantity. The first cross referenced list is the manufacturer's part number to the NSN. The second list is NSN, in NIIN sequence to part number. If the NIIN is not included in the COSAL, it shall not be on these lists.

5.3.4 **Repair Parts.** Two basic types of repair parts are "parts peculiar," and "parts common."

a. **Repair Parts Peculiar.** Parts applicable to a specific make and model of equipment are Repair Parts Peculiar. All parts peculiar to a unit are listed on the APL.

b. **Repair Parts Common.** Common and consumable supplies that can be used on numerous types of equipment are Repair Parts Common. These items have been separated into a Repair Parts Common Assembly (NAVSUP Modifier 96 and

Modifier 97 kits) to reduce overstocking that could occur if these items were carried within separate Repair Parts Peculiar Allowance Parts Lists. The Mod 96 and Mod 97 kits are designed to supplement Repair Parts Peculiar for the first 60 days or 1,200 construction hours of a contingency operation. The Mod 97 kits are packaged as Modular Assemblies. A Mod 97 kit consists of 29 different kits, Mod 96 kit consists of 19 different kits, each of which has been assigned an individual APL number. This allows Repair Parts Common Assemblies to be printed in the same COSAL format and arrangement as Mod 98 kits. Also, illustrated NFELC catalogs are provided called *NAVSUP Modifier Code 96 and 97 Catalogs*.

#### 5.4 **COSAL Allowance Changes**

5.4.1 **COSAL Deficiencies.** Most Consolidated Seabee Allowance List (COSAL) deficiency reports result from errors on individual Allowance Parts Lists (APL). Because these same APLs are frequently used in other COSALs, any identified error must be reported to NFELC immediately on NAVSUP Form 1220-2, *Allowance Change Request/Report* (Figure 5-1). If a NAVSUP Form 1220-2 is not available, the same information should be submitted by letter to NFELC.

5.4.2 **NFELC Responsibilities.** The Naval Facilities Expeditionary Logistics Center (NFELC) shall thoroughly research each report to ascertain its validity and, where appropriate, NFELC shall request that Navy Inventory Control Point (NAVICP) make necessary APL changes. The activity originally submitting the report shall then be notified of the action taken. Changes that affect several COSALs shall be listed in the *NFELC Maintenance Bulletin*.

ALLOWANCE CHANGE REQUEST NAVSUP 1220-2 (12-78) S/N 0108-LF-501-2208		Instructions on Reverse		Please Type or Print	
1. FROM: CBMU-302 CIVIL ENGINEER SUPPORT OFFICE TO: CBC, PORT HUENEME, CA 93043 ATTN: CESO. CODE 15742P VIA: (USE ONLY IF REQUIRED BY YOUR COMMAND)		2. Date/Serial Number APRIL 1, 1987 0001		3. APL/ASL/RC Number 95031-2467 44-01781	
4. Status of Requested/Altered Item <input checked="" type="checkbox"/> Item Addition or <input checked="" type="checkbox"/> Item Deletion		<input type="checkbox"/> Item on Board or <input type="checkbox"/> Item Not on Board			
5. National Stock Number (NSN) or FSCM & Part Number	6. Equipment/Component (E/C) or Item Name/Structure	7. Unit of Issue	8. Unit Price	9. Present Qty. Allowed	10. New Total Qty.
4330-00-056-9832	ELEMENT, FILTER	EA		001	
4330-00-058-7631	ELEMENT, FILTER	EA			002
12. Justification (Mandatory) NSN 4330-00-056-9832 IS LISTED ON APL 95031-2467 BUT IS INCORRECT FOR THIS EQUIPMENT APPLICATION. FILTER IS TOO LONG AND TOO LARGE A DIAMETER. PHYSICAL INSPECTION AND RESEARCH OF MCRL SHOWS NSN 4330-00-058-7631 TO BE THE CORRECT FILTER.					
13. Copy To:		14. Signature: CMC J. A. TOTIN			
15. First Endorsement		<input type="checkbox"/> Approval Recommended		<input type="checkbox"/> Disapproved	
				<input type="checkbox"/> Other	

Figure 5-1. Allowance Change Request/Report, NAVSUP Form 1220-2

5.4.3 **Completion of NAVSUP Form 1220-2.** Prepare an original and one copy (more if required by Command) for each report submitted. Multiple errors may be listed on one form if they relate to the same APL and component identification group. Retain one copy for file and submit the original to NFELC. Most reported problems require extensive research; therefore, the originator should include all available information and attach any supporting documentation; for example, VIN, line setting tickets, component model numbers/codes. The following detailed instructions are a ready reference.

<u>Block</u>	<u>Entry</u>
1	<u>From:</u> Originating unit <u>To:</u> NFELC Code 1574 <u>Via:</u> Use only if required by the Command.
2	<u>Date:</u> Date the report was prepared. <u>Serial Number:</u> Sequential number assigned by originator to track and identify the NAVSUP Form 1220-2.
3	<u>APL/AEL/RIC Number:</u> Allowance Parts List/Allowance Equipage List/Repairable Identification Code number and USN number that apply to the report.
4	<u>Status of Requested/Allowed Item:</u> Check appropriate block(s).
5	<u>National Stock Number (NSN) or CAGE and Part Number:</u> Stock number or code and part number of item affected by the change. If a request is made for the replacement of one item with another, enter the item to be deleted first, followed by the item recommended as the replacement.
6	<u>Equipment/Component (E/C) or Item Nomenclature:</u> Enter nomenclature corresponding with NSN or CAGE and part number.
7	<u>Unit of Issue:</u> Self-explanatory.
8	<u>Unit Price:</u> Not required by NFELC.
9	<u>Present Quantity Allowed:</u> How many are shown on present APL?
10	<u>New Total Quantity:</u> How many should be shown on APL?
11	<u>Extended Value of Change:</u> Not required by NFELC.
12	<u>Justification:</u> Indicate reason for requested change. If existing item is incorrect, explain why it doesn't work.
13	<u>Copy To:</u> For internal use as required by Command.
14	<u>Signature:</u> Requires signature of person authorized to report/request allowance changes, usually the Maintenance Supervisor.

15                    First Endorsement: Leave blank. This block shall be used by NFELC to indicate to the submitter what action has been taken.

**NOTE:** *Manufacturers identify vehicle component parts with unit/division codes. Forward copies of line set tickets, bill of materials, calibration codes, service parts identification labels, certification labels, or any parts identification information associated with a piece of equipment, with the NAVSUP Form 1220-2.*

## 5.5    **Technical Manuals**

5.5.1    **Provision of Technical Manuals.** An effective equipment management program needs technical data and guides for each item of equipment. Within the NCF, operator manuals, lubrication charts, parts manuals, and shop repair manuals are included in each unit's parts peculiar COSAL under NNFELC Hueneme local stock number "0NL-7610-LL-Lxx-xxxx." The quantity of technical manuals (TM) is determined by the same methods used for repair parts. This provides one copy for each piece of equipment of the same make and model assigned to the unit; two copies for two pieces of the same make and model; three copies for three to eight pieces of the same make and model; and four copies for nine to twenty pieces of the same make and model equipment.

5.5.2    **NFELC Responsibilities.** The NFELC directs and administers the technical manual support program for NCF Units and requires equipment manufacturers to furnish the appropriate TMs with every purchase. These TMs can be military (U.S. Army, USMC, USAF), Commercial (standard manufacturers), or modified Commercial (standard manufacturers TMs modified to meet specific requirements).

5.5.3    **Naval Facilities Expeditionary Logistics Center Responsibilities.** Based on COSAL computations, NNFELC Port Hueneme provides TMs to NCF units with the repair parts pack up.

5.5.4    **Manual Maintenance.** All NCF units shall maintain all TMs listed in their COSAL. Inventory control of TMs must be maintained through periodic inventories and checkout procedures because replacement manuals for older equipment are usually hard to obtain. Manuals in excess of COSAL quantities must be returned to NNFELC Hueneme marked for "M3 Stock." If the COSAL lists incorrect TMs or does not list all the required TMs, submit a NAVSUP Form 1220-2 to NFELC in accordance with paragraph 5.4.3. Technical Manuals that are lost, damaged, worn out, or otherwise unserviceable shall be replaced by submission of funded requisitions to NNFELC Port Hueneme. The requisitions shall include the TM stock numbers from the COSAL. If not

available all TM identification and equipment identification that includes USN number, make, model, year of manufacture, serial numbers, and original procurement contract number, shall be provided.

## 5.6 Issue Request Document

5.6.1 **Single Line-Item Consumption Document.** NAVSUP Form 1250-1, *Single Line Item Consumption Document* (Figure 5-2), is used as authorization to draw material from the storeroom and to request not in stock (NIS) or not carried (NC) items from the unit supply. NAVSUP Form 1250-1 is a seven-part snap set with copies colored white (original), white (copy), green, blue, pink, yellow, and buff (hard back). Colored copies of the NAVSUP 1250-1 shall be distributed in accordance with NAVSUP P-485, *Afloat Supply Procedures*, Chapter 6 and the Seabee Supply Manual 4400.3, Chapter 6.

1. REQ DATE 8117	2. EMPT. NO. A252	3. URGY C	4. ROD	5. LOCATION	6. <input type="checkbox"/> EN <input checked="" type="checkbox"/> NON-EN	7. ISSUE DATE	8. REQ. NO. 8119-2113
9. MOUN NAME OR REF SYM CORE		10. APL/NEUCID 950083152	11. INV QTY <input type="checkbox"/> NO <input checked="" type="checkbox"/> NC		12. C. OBL AMT		
13. JOB CONTROL NUMBER V 55752 AA00 0836 Z100000				14. BIC	15. EQUIP COSAL SUPPLY <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
16. BC COG MCC G 9C 2930 007603140				17. EA	18. QUANTITY 1	19. UNIT PRICE 6289	20. EXTENDED PRICE 6289
21. FUND BR				22. FUND			
23. REMARKS RADIATOR CORE USN 94-75079 PMG 27				24. APPROVED BY:			
				25. RECEIVED BY:			
26. DOC IDENT	27. RTG IDENT	28. SVC	29. UIC	30. JUL DATE	31. SERIAL	32. SUPPL ADDRESS	33. FUND DIST PROJ PRI ROD ADV
SINGLE LINE ITEM CONSUMPTION / REQUISITION DOCUMENT (MANUAL) NAVSUP FORM 1250-1 (7 PT) (REV. 12/78) B / N 8108-LF-901-3886							

Note: Use typewriter or ballpoint pen and press hard to insure legibility for all copies.

Figure 5-2. Single Line-Item Consumption Document  
NAVSUP Form 1250-1

5.6.2 **Completion of NAVSUP Form 1250-1.** The NAVSUP Form 1250-1 shall be prepared, processed, and transmitted in accordance with NAVSUP P-485 and directives such as the Seabee Supply Manual, 4400.3. The forms shall be prepared with either a ballpoint pen or typewriter. Confusion between the numeral zero and the letter O shall be avoided by using the communication 0 (or virgule) for zero. A detailed explanation of each of the form's data blocks that pertain to maintenance personnel is listed below. Blocks marked with an asterisk (\*) must be completed by maintenance personnel before submitting the form to Supply.

<u>Block</u>	<u>Entry</u>
*1	<u>Material Request Date.</u> Enter the Julian date that the form is submitted to Supply.
*2	<u>Department No.</u> Enter the internal control number assigned to each form submitted to Supply for procurement of material.
*3	<p><u>Urgency.</u> Enter the Urgency-of-Need Designator (UND) "A," "B," or "C" as appropriate. UNDs are defined as follows:</p> <p>UND A.        The requirement is immediate. Without the material, the unit cannot perform its mission.</p> <p>UND B.        The requirement is immediate or shall be in the future. Without this material, the unit's capability shall be impaired. The designator can be used to order stock for mission-essential equipment when the last (minimum replacement unit) item has been issued off the shelf.</p> <p>UND C.        Routine requirements.</p>
*4	<u>Required Delivery Date (RDD).</u> Enter the Julian date that delivery of the material is required. Entered only when the required item is not in stock (NIS) or not carried (NC) and the priority authorized will not provide timely delivery.
5	<u>Location.</u> Supply entry.
6	<u>Selected Item Management (SIM/Non-SIM).</u> Supply entry.
7	<u>Material Issue Date.</u> Supply entry.

<u>Block</u>	<u>Entry</u>
*8	<u>Noun Name or Reference Symbol.</u> Enter nomenclature or noun name of the item requested.
*9	<u>Failed Part Replacement (FPR).</u> Annotate it. For example, a replacement pump failed (did not wear out).
10	<u>Allowance Parts List/Allowance Equipage List/Component Identification (APL/AEL/CID).</u> Enter the APL number or TOA assembly number of the equipment for which the item is requested.
11	<u>Inventory.</u> Supply entry.
12	<u>Not In Stock/Not Carried (NIS/NC).</u> Supply entry.
13	<u>Unit Identification Code (UIC).</u> Prefix the UIC by the appropriate service designator code: "R" for Pacific, "V" for Atlantic, and "N" for other units.
14	<u>Work Center Code.</u> Supply entry.
15	<u>Job Sequence Number (JSN).</u> The JSN is a four-digit numeric. When the material being documented is not identified to a specific ERO, such as Pre-Expended Bin (PEB), and SHOP USE material, the JSN block shall be filled with zeros. When JSN "0000" is used, print "PEB" or "SHOP USE," as applicable in Remarks Block 29. For maintenance and repair of specific CESE items, each ERO shall be given a JSN sequentially assigned between the numbers 0001 and 9999.
*16	Enter "Z100000" except for PEB or SHOP USE material, for which "X000000" is entered.
17	<u>Equipment COSAL Supported Yes/No.</u> Supply entry.
18	<u>Source Code.</u> Supply entry.
19	<u>Cognizance (COG).</u> Enter the numeric-alpha cognizance symbol of the NSN listed in Blocks 21 and 22.
21/23	<u>National Stock Number/Navy Item Control Number (NSN/NICN); includes Special Materials Identification Code (SMIC), if applicable.</u> For part number items, the Commercial and Government Entity (CAGE) must be indicated, followed by the part number. When the manufacturer's part number consists of ten digits or less, the part number shall begin in the second position of Block 22 and may continue through Block 23. The

five-digit CAGE Code, if known, shall be entered in Block 21 and the first position of Block 22. If the CAGE Code is not known and cannot be determined, Block 21 and the first position of Block 22 shall be left blank. When a part number exceeds ten digits, an asterisk (\*) shall be entered in the first position of Block 21 and a corresponding asterisk shall be entered in data Block 29 preceding the CAGE/part number.

When a part number exceeds ten digits, an asterisk (\*) shall be entered in the first position of Block 21 and a corresponding asterisk shall be entered in data Block 29 preceding the CAGE/part number.

- \*24      Unit of Issue (U/I). Enter unit of issue.
- \*25      Quantity. Enter quantity requested.
- 26      Unit Price. Enter unit price of material.
- 27      Extended Price. Enter unit price times quantity.
- 28      Fund. Supply entry.
- \*29      Remarks. USN number and equipment description data when there is no APL. Enter additional information pertinent to the requested item. For parts without an NSN, enter the manufacturer's five-character CAGE code, part number, technical manual title and publication number, page number, figure number, and item number.
- \*30      Approved by. Signature of the Maintenance Supervisor or the designated representative.
- 31      Received by. Signature/grade or rate of the person receiving material.
- A      Requisitioned Quantity (Reqn Qty). Supply entry.
- B      Requisition Number (Reqn No). Supply entry.
- C      Obligated Amount (Obl Amt). Supply entry.
- D      Posted. Supply entry.
- E      Supply entry.



5.6.3 **Nonavailability of Parts.** If the required part is not immediately available, Supply shall annotate the NAVSUP Form 1250-1 with data that concerns like items on order but not received, mark the form NIS (Not In Stock) or NC (Not Carried) and return the form to the mechanic. The Maintenance Supervisor or higher authority shall assign priority and authorize the part to be ordered. Cost Control shall assign a department order number for each part ordered, starting with the number 0001, and forward the copies back to Supply for ordering. Parts on order are called "parts pending" if they were ordered to replenish stock. If parts were ordered for a specific USN number of CESE, they are called "direct turnover" (DTO) parts.

## 5.7 **Repair Parts Status and Accountability**

5.7.1 **Direct Turnover Parts Procedures.** The Maintenance Supervisor assigns priorities for all NAVSUP Forms 1250-1 marked NIS or NC, and completes Blocks 3 and 4. The Maintenance Supervisor (or higher authority) authorizes all NAVSUP Forms 1250-1 for procurement by signing Block 30.

All NAVSUP Forms 1250-1 for NIS or NC material must pass to the Cost Control/DTO Clerk who enters an order number in Block 2 of the form, annotates the Direct Turnover (DTO) Log, annotates the Repair Part Summary Sheet, and then submits the form to the unit Supply.

Supply completes the ordering actions and issues a Procurement Document. Supply shall assign a requisition number to each Procurement Document, and enters this requisition number in Block B of the form, and returns the yellow (Y) copy to the Cost Control/DTO Clerk.

The Cost Control/DTO Clerk enters the requisition number on the DTO Log and the Summary Sheet, and files the yellow copy with the correct Summary Sheet. The Cost Control/DTO Clerk shall maintain accountability and status of all parts on order by periodically requesting status from Supply. When Supply receives the ordered repair part, a copy of the NAVSUP Form 1250-1 is forwarded to the Cost Control/DTO Clerk who must then determine if the part is still required.

Questionable items shall be discussed with the Maintenance Supervisor. Parts that are not required shall not be stored in the DTO bins; they shall be returned to Supply for return to stock, in accordance with Supply regulations. The Cost Control/DTO Clerk tags each repair part with the correct USN number, PM Group, and the yellow (Y) copy of the NAVSUP Form 1250-1, and dates the DTO Log and the Summary Sheet to show that the item was received.

The part is stored in the DTO bin, and the pink (P) copy of the form is filed with the appropriate Summary Sheet. The Summary Sheet can now be used as a record to show what parts were stored in the DTO bins.

When the part is issued, line through the received date (column 6) with a yellow marker pen to show that the part is no longer in the bin. If the received part is for a deadlined piece of equipment, notify the Maintenance Supervisor who decides if enough parts are available to restart work on the vehicle.

Each time an Equipment Repair Order (ERO) is issued, the Cost Control/DTO Clerk checks the Repair Parts Summary Sheets to determine if parts are stored in the DTO bin for the USN number. If so, the Cost Control/DTO Clerk attaches a note to the ERO to alert the Shop Supervisor who shall ensure that the parts are either used or returned to Supply. The DTO bin for the PM group that was worked through the shop yesterday should be empty today, because all parts should have been used or returned to Supply, unless all the required vehicle parts have not been received.

**5.7.2 Direct Turnover Status Keeping Records.** Each department that orders material is required to maintain records to manage and control requisitions. This information must be maintained in a standardized and logical manner, since log procurement lead times and periodic rotation of units and personnel increase the chances that the part will be received by someone who did not originally place the order. The unit's Cost Control/DTO Clerk shall maintain the maintenance shop's DTO records.

When requesting status from Supply, the Cost Control/DTO Clerk must be able to identify the requisition number in which he is interested. Accurate DTO records allow the Cost Control/DTO Clerk to identify the USN numbered equipment for which each part was ordered. The DTO repair parts status-keeping system described in the paragraphs that follow provide excellent accountability with minimum effort. This system consists of two records designed to be used together: (1) the DTO Log (Figure 5-3), and (2) the Repair Parts Summary Sheet (Figure 5-4). These records may be kept in the form of a book or a loose-leaf binder. In addition, a secure area to store received parts must be available.

Dept. No.	Julian Date	PMG	USN	NSN	Desc.	Qty.	PRI	Req. No.	Rec'd.
0001	3003	01	48-00123	2815-00-739-6098	Valve	1	C	4010-2111	
0002	3003	01	48-00123	2815-00-962-5622	Spring	1	C	4010-2112	
0003	3010	06	96-11031	2810-00-950-8385	Injector	6	A		

Figure 5-3. Direct Turnover (DTO) Log

5.7.3 **Direct Turnover Log Maintenance.** Fill in the in the DTO Log (Figure 5-3) as follows:

<u>Column</u>	<u>Entry</u>
1	<u>Department Order Number.</u> Enter the internal control number assigned to each NAVSUP Form 1250-1 submitted to Supply, numbered in sequence starting with number 0001. This column is maintained so that the last NAVSUP Form 1250-1 entered is the last part ordered.
2	<u>Julian Date.</u> Enter the date the Form 1250-1 was submitted to Supply.
3	<u>PM Group.</u> Enter the preventive maintenance group in which the USN number is assigned.
4	<u>USN Number.</u> Enter the USN registration number of the vehicle for which the part was ordered.
5	<u>NSN Number.</u> Enter the NSN or the CAGE and part number of the ordered item.
6	<u>Description.</u> Enter nomenclature or noun name of ordered item.
7	<u>Quantity.</u> Enter the amount ordered.
8	<u>Priority.</u> Enter the priority letter/number.
9	<u>Requisition Number.</u> Enter the requisition number from Block B when the NAVSUP Form 1250-1 yellow (Y) copy is returned from Supply.
10	<u>Received.</u> Enter the date received.

5.7.4 **Repair Parts Summary Sheets.** Repair Parts Summary Sheets (Figure 5-4) show all vehicle parts on order. One sheet is maintained for each assigned USN number, and the Repair Parts Summary Sheets are filed in PM group order. All preventive maintenance EROs go to the Cost Control/DTO Clerk to avoid accidental reordering of items and to allow the clerk to attach notification (DD Form 1250-1) to the ERO to show that the parts are in the DTO bin. Repair Parts Summary Sheets provide reference to determine the quantity of parts received from a multiple order, such as parts for an engine overhaul. When equipment is to be transferred or disposed of, the Repair Parts Summary Sheet is used to identify outstanding requisitions so that they may be canceled.

Date	Dept. No.	Req. No.	UND	Nomenclature	Follow-Up	Rec'd.
96018	0009	2021-2211	C	Gasket Set	1/31	2/28
96189	0161	2230-2713	B	Injector	8/28 9/15 10/2	10/11

Figure 5-4. Repair Parts Summary Sheet

a. Repair Parts Summary Sheet Maintenance. The columns required on a Repair Parts Summary Sheet are listed below and explained as follows:

<u>Column</u>	<u>Entry</u>
Header	<u>Equipment Code and USN Number.</u> One sheet for each USN number.
1	<u>Julian Date.</u> Enter date NAVSUP Form 1250-1 was submitted to Supply.
2	<u>Department Order Number.</u> The number entered in Block 2 of NAVSUP Form 1250-1 prior to submittal to Supply. This number serves as a cross-index between the DTO Log and the Repair Parts Summary Sheet.
3	<u>Requisition Number.</u> Enter the requisition number from Block B of the NAVSUP Form 1250-1 when the yellow (Y) copy of the form is returned from Supply.
4	<u>Urgency-of-Need Designator.</u> Enter the urgency of need designator (UND) from Block 3 of the NAVSUP Form 1250-1.
5	<u>Nomenclature.</u> Enter description or noun name of the ordered item.
6	<u>Follow-Up.</u> Enter dates when Cost Control/DTO Clerk requested status from Supply.
7	<u>Received.</u> Enter the date the ordered item is received. This column should allow room to explain and cross-reference cancellations, partial shipments, and reorders. Always enter the new Department Order Number on all reorders.

b. Deadline Parts Action. The same procedure is followed for Deadline Parts Action as outlined above, except that the Repair Parts Summary Sheet is filed with the complete Equipment Repair Order in the deadline file.

5.7.5 **Direct Turnover Parts Storage.** The DTO bins require a secure area large enough to contain 40 cubes measuring 12 inches by 12 inches by 12 inches (minimum) to store DTO parts. Each cube must be labeled with a Preventive Maintenance Group. When DTO parts are received, they must be placed in the cube that corresponds to the PM group of the equipment that require the parts. This area must be able to be locked, and must be remote from the repair parts room.

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## **APPENDIX A. DEFINITIONS AND TERMS**

**Note:** Definitions and terms pertinent to this publication are as follows:

**Administrative Use Motor Vehicles.** The term "administrative use motor vehicles" means all wheeled-type pneumatic-tired motor vehicles normally of commercial design and transport type which are used for the movement of supplies, personnel, and equipment in providing administrative logistic support to installations or activities, including support of Government personnel at contractor-operated facilities. Vehicles of military design may also be designated and used for administrative purposes in which case they are so classified.

**Automotive Vehicles.** The term "automotive vehicles" includes trailers and all self-propelled motor vehicles designed for highway or cross-country operations. Specifically included are buses, sedans, trucks, carryalls, station wagons, ambulances, refuelers, defuelers, truck trailers, brush, structural, aircraft fire fighting, and rescue operation trucks. It does not include bicycles, vehicles designed primarily for use on rails, construction equipment, materials handling equipment, amphibious vehicles, or vehicles (with or without armor) designed for active participation in combat.

**Base.** The word base (on base/off base), as used in this publication means: "within the perimeter boundaries of a U.S. Government installation."

**Budget Year.** This term is defined as the year two years after the current year.

**Bus.** A vehicle specifically designed and manufactured to carry more than 16 passengers (including the driver).

**Civil Engineering Support Equipment (CESE).** The term "Civil Engineering Support Equipment" is synonymous with the term "transportation equipment" used in this publication. CESE is a procurement budget term referring to equipment for which COMNAVFACENGCOM has the responsibility for determining requirements, procuring, and assigning. The equipment includes automotive vehicles, construction, railway, fire fighting, and mobile weight handling equipment. Weight handling equipment such as portal, gantry, jib and other facility cranes normally fixed are not classified as CESE.

**Claimant.** Claimant or Major Claimant, as used in this publication, is an Echelon II Command, responsible for inventory objectives assigned to activities for Civil Engineering Support Equipment (CESE).

**Commercial Motor Vehicle.** A commercial motor vehicle is defined as being a vehicle that (1) has a manufacturer's gross vehicle weight rating (GVWR) or gross combination weight rating (GCWR) of 26,001 pounds or more, or has a GCWR, inclusive of a towed unit with a GVWR of more than 10,000 pounds, or (2) is designed to carry 16 or more passengers, including the driver, or (3) is of any size and used in the transportation of hazardous materials in a quantity requiring placarding by federal law or regulations.

**Construction Equipment.** The term "Construction Equipment" means all mechanical equipment used in the construction, alteration, or repair of buildings, bridges, roads, or other kinds of real property. It includes pile drivers, power shovels and cranes with special attachments, road rollers, tractors, scrapers, plows, street sweepers, sprinkle carts, and the like; and portable boilers, pumps, and air compressors. It also includes such stationary machines and mechanical apparatus as rock crushing plants, concrete batching and mixing plants, and similar equipment used exclusively in the construction and maintenance of public works. When used as a general term "Construction Equipment" includes mobile weight handling equipment and equipment such as man lifts not normally associated with the term construction equipment.

**Current Year.** This term is defined as the fiscal year during which the inventory objective and requirements review is to be submitted.

**Navy Working Capital Fund (NWCF) Activities.** NWCF activities are those activities engaged in producing goods or providing services on a reimbursable basis. For the purposes of this instruction, NWCF activities are those activities authorized to purchase Class III property from their revolving fund. Examples of NWCF activities are naval shipyards, public works centers, research laboratories, and weapons stations.

**Engineering Field Activity (EFA).** The term "Engineering Field Activity" as used in this publication refers to the Commanding Officers of the Chesapeake, Mediterranean, Northwest, West, and Great Lakes activities of the Engineering Field Divisions (EFDs).

**Engineering Field Division (EFD).** The term "Engineering Field Division" as used in this publication refers to the Commander/Commanding Officer of the Pacific, Atlantic, Northern, Southern, and Southwestern Divisions of COMNAVFACENGCOM.

**Expense Items.** Expense items are equipment with a unit cost of less than \$100,000 which is not designated for centralized, individual item management. COMNAVFACENGCOM is the central manager for CESE. Accordingly, all CESE listed in the CASEMIS descriptive reference table will be included in the procedures of this manual regardless of the unit cost.

**Hire of Motor Vehicles.** This term includes charter or rental arrangements with commercial contractors or with the General Services Administration from its interagency motor pools. Hire of motor vehicles is further defined as "charter" when the driver is provided by the contractor, and as "rental" or "lease" when military or civilian personnel of DoD are used as drivers.

**Inventory.** This term is defined as the equipment on-hand and carried on the activity plant account records. This equipment shall be used to fill authorized inventory objectives. Inventory excess to inventory objectives shall not be acquired or retained for temporary convenience.

**Inventory Objective (IO).** This term is defined as the quantity of equipment authorized to be held in inventory. The sum of each equipment code authorized Navy-wide becomes the inventory objective and is utilized in the annual CESE budget.

**Maintenance.** The term "maintenance" or "preventive maintenance" as used in this publication denotes all work functions performed on transportation equipment to determine, prevent, or correct physical damage and mechanical malfunctioning in the degree necessary to continue or restore the equipment to a safe and serviceable condition. The term "maintenance" includes the functions designated as inspection, lubrication, adjustment, service, repair, rebuild, part replacement, overhaul, and rehabilitation.

**Material Handling Equipment (MHE).** The term "material handling equipment" means all self-propelled and conveyor equipment used in storage and materials handling operations in and around warehouses, shipyards, industrial plants, airfields, magazines, depots, docks, terminals, and on-board ships. Included are warehouse tractors, forklift trucks, rough terrain forklift trucks, pallet trucks, conveyors and conveyor systems, and straddle carrying trucks. The Naval Supply Systems Command (NAVSUP) has cognizance over MHE.

**Motor Vehicle.** Any self-propelled vehicle designed and operated for transporting property or passengers.

**Motor Vehicle Operator.** A person regularly required to operate a motor vehicle as their primary employment responsibility.

**Non-passenger-carrying Vehicles.** The term "non-passenger-carrying vehicles" means conventional type trucks and trailers that in general are not primarily intended for transportation of personnel. Although scooters, motorcycles, multiple-drive weapons carriers, jeeps, and prime movers can be used to transport personnel, all are classed as non-passenger-carrying vehicles.



**Overhaul.** To disassemble/dismantle in order to examine thoroughly and make needed repairs to an individual component.

**Overseas Command.** The term "overseas command" includes certain Fleet and Force commands in overseas areas that have responsibilities for field coordination control of transportation equipment matters.

**Passenger Carrying Vehicles.** The term "passenger carrying vehicles" includes sedans, station wagons, ambulances, buses, sport utility vehicles (SUVs), and carryall passenger vans.

**Public Works Department (PWD)/Public Works Center (PWC).** PWDs and PWCs have the mission of providing the full range of public works services, including utilities, facilities maintenance, housing, transportation, engineering services, shore facilities planning support, and other public works support required by operating forces, dependent activities, and others located in and around the naval complex being served.

**Railway Equipment.** The term "railway equipment" means all Navy-owned locomotives and rolling stock designed primarily for use on rails.

**Remanufacture.** The term "remanufacture" is defined as a process involving the repair of an asset to such an extent that it meets the characteristics typical of the same type of equipment presently coming off the production line. This type of repair could require the replacement of approximately 80% of the components of the asset with new state of the art parts and systems.

**Repair.** The term "repair" is defined as those maintenance functions which restore individual parts, components, or assemblies of an equipment unit to a safe, serviceable condition. The term "repair" includes unit overhaul and unit replacement.

**Resource Sponsor.** A resource sponsor is a Deputy or Assistant Chief of Naval Operations (DCNO/ACNO) or Director of a Major Staff Office, who is responsible for programming all resources to support his/her specific mission area.

**Service Life Extension Program (SLEP).** The term "SLEP" is defined as any one-time group of major repairs/overhauls specifically planned and scheduled over a limited period of time which has the effect of extending the service life of the equipment two or more years.

**Special Use Vehicles.** The term "special use vehicles" describes all vehicles not otherwise classified as administrative use motor vehicles. It is used to officially designate those vehicles which may be excluded from the general utilization program. It is applicable to those vehicles which are commercially designed to achieve a purpose which precludes its use in day-to-day, over-the-road operations. Examples of such vehicles are

fire trucks and wreckers. The term includes vehicles originally designed for general transport but to which a unit of equipment has now been affixed which precludes its use as an administrative use motor vehicle. It does not include a unit otherwise used as an administrative use motor vehicle, but to which is temporarily attached (as a local expedient) an item of equipment such as a snowplow blade. The determination that the special purpose category applies will be made by the TEMCs.

**Specialized Equipment.** The term "specialized equipment" describes vehicles or equipment which are designed, developed, and constructed for any office or command for its own predominant use in performance of a service peculiar to that command or office. It includes equipment which, though built with a standard engine and chassis, are otherwise modified to such a major extent that it can only be used by the specific command or office. This type equipment would normally be funded for by the specific command with sole use and/or ownership.

**Transportation Equipment.** The term "transportation equipment" used in this publication includes all types of automotive vehicles, construction, railway, fire fighting, and mobile weight handling equipment.

**Transportation Equipment Management Center (TEMC).** This term means the component within NAVFACENGCOM EFDs located in Norfolk and Pearl Harbor responsible for providing technical assistance to designated Commands/Major Claimants and to all field activities on a geographic basis, on transportation equipment inventory objectives and for administering the assignment, replacement, disposal, maintenance, and utilization of transportation equipment. Also, for the purpose of this publication, NFELC and the Equipment offices of COMSECONDNCB and COMTHIRDNCB perform many of the same functions as LANT/PAC TEMCs and are considered TEMCs for the NCFs and SOUs.

**Weight Handling Equipment (WHE).** The term "weight handling equipment" includes mobile or transportable truck, crawler and railway mounted locomotive cranes normally used for lifting, moving, and placing heavy material or equipment. The term also includes captive cranes of the gantry/portal and hammerhead type which are not included in the CESE program. (For detailed WHE terms and instructions, see NAVFAC P-307).

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## **APPENDIX B. ABBREVIATIONS**

2C	COGNIZANCE EQUIPMENT CESE.
3-CCP	3-COLOR CAMOUFLAGE PATTERNS
ABFC	ADVANCED BASE FUNCTIONAL COMPONENT
ABFHS	AMPHIBIOUS BUOYANT FUEL HOSE SYSTEM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APL	ALLOWANCE PARTS LIST
AVGAS	AVIATION GASOLINE
BARR	BIENNIAL ALLOWANCE AND REQUIREMENTS REVIEW
BHP	BRAKE HORSEPOWER
BMEP	BREAK MEAN EFFECTIVE PRESSURE
BMU	NAVAL BEACHMASTER UNIT
BOAC	BILLING OFFICE ADDRESS CODE
CAGE	COMMERCIAL AND GOVERNMENT ENTITY CODE (MANUFACTURERS' CODES)
CARC	CHEMICAL AGENT RESISTANT COATING
NFELC	NAVAL FACILITIES EXPEDITIONARY LOGISTICS CENTER
CBMU	CONSTRUCTION BATTALION MAINTENANCE UNIT
CBU	CONSTRUCTION BATTALION UNIT
CED	CONSTRUCTION EQUIPMENT DEPARTMENT
CEEI	CIVIL ENGINEER END ITEMS
CESE	CIVIL ENGINEERING SUPPORT EQUIPMENT
CFE	CONTRACTOR FURNISHED EQUIPMENT
CHB	CARGO HANDLING BATTALION
CHTB	CARGO HANDLING TRAINING BATTALION
COCOWARGRU	COMMAND AND CONTROL WARFARE GROUPS
COG	COGNIZANCE
COSAL	CONSOLIDATED SEABEE ALLOWANCE LIST
CSNP	CAUSEWAY SECTION, NONPOWERED
CSP	CAUSEWAY SECTION, POWERED
CSR	CENTRAL STOREROOM
CSC	CONVENTION FOR SAFE CONTAINERS
CULT	COMMON USE MILITARY LAND TRANSPORTATION
CW	CURB WEIGHT
DAAS	DEFENSE AUTOMATIC ADDRESS SYSTEM
DBHP	DRAWBAR HORSEPOWER
DBPP	DRAWBAR POUNDS PULL
DED	DIESEL ENGINE DRIVEN
DISREP	DISCREPANCY IN SHIPPING REPORT
DLA	DEFENSE LOGISTICS AGENCY
DRMO	DEFENSE REUTILIZATION MARKETING OFFICE
E/C	EQUIPMENT/COMPONENT
EC	EQUIPMENT CODE

EFD	ENGINEERING FIELD DIVISION
EIR	EQUIPMENT IDENTIFICATION RECORD
ELCAS	ELEVATED CAUSEWAY
EM	EQUIPMENT MAINTENANCE
EMD	ELECTRIC MOTOR DRIVEN
EMS	EQUIPMENT MANAGEMENT SYSTEM
EO	EQUIPMENT OPERATION
EODGRU	NAVAL EXPLOSIVE ORDNANCE DISPOSAL GROUP
ERO	EQUIPMENT REPAIR ORDER
FAR	FEDERAL ACQUISITION REGULATION
FSN	FEDERAL STOCK NUMBER
GCW	GROSS COMBINATION WEIGHT
GED	GASOLINE ENGINE DRIVEN
GFE	GOVERNMENT FURNISHED EQUIPMENT
GOCO	GOVERNMENT OWNED, CONTRACTOR OPERATED
GSE	GROUND SUPPORT EQUIPMENT
GVW	GROSS VEHICLE WEIGHT
GVWR	GROSS VEHICLE WEIGHT RATING
HM-14, HM-15	HELICOPTER MINE COUNTERMEASURE SQUADRONS
HTW-ONE	HELICOPTER TACTICAL WING ONE
HP	HORSEPOWER
ICCN	ISO CONTAINER CONTROL NUMBER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
ILO	INTEGRATED LOGISTICS OVERHAUL
ILS	INTEGRATED LOGISTIC SUPPORT
INST	INSTRUCTION
I&R	INVENTORY AND REGISTRATION
J&A	JUSTIFICATION AND APPROVAL
JAG	JUDGE ADVOCATE GENERAL
JCCO	JOINT CONTAINER CONTROL OFFICE (BAYONNE, NJ)
JCN	JOB CONTROL NUMBER
JSN	JOB SEQUENCE NUMBER
JTR	JOINT TRAVEL REGULATION
LPG	LIQUIFIED PETROLEUM GAS
MCRL	MASTER CROSS REFERENCE LIST
MDSU	MOBILE DIVING AND SALVAGE UNIT
MEO	MOST EFFICIENT ORGANIZATION
MHE	MATERIAL HANDLING EQUIPMENT
MILVAN	MILITARY VAN (CONTAINER)
MIS	MANAGEMENT INFORMATION SYSTEM
MIUW	MOBILE INSHORE UNDERSEA WARFARE UNIT
MPG	MILES PER GALLON
MPV	MULTIPURPOSE PASSENGER VEHICLE
MUSE	MOBILE UTILITY SUPPORT EQUIPMENT
MWO	MODIFICATION WORK ORDERS

NAVAIDSUPUNT	NAVIGATIONAL AIDS SUPPORT UNIT
NAVBEACHGRU	NAVAL BEACH GROUP
NAVCHAPGRU	NAVAL CARGO HANDLING AND PORT GROUP
NAVICP	NAVY INVENTORY CONTROL POINT
NCB	NAVAL CONSTRUCTION BRIGADES
NNFELC	NAVAL FACILITIES EXPEDITIONARY LOGISTICS CENTER
NCF	NAVAL CONSTRUCTION FORCE
NCFSU	NAVAL CONSTRUCTION FORCE SUPPORT UNIT
NCR	NAVAL CONSTRUCTION REGIMENT
NCTC	NAVAL CONSTRUCTION TRAINING CENTER (ALSO NAVCONSTRACEN)
NDT	NONDESTRUCTIVE TEST
NFTS	NAVAL FACILITIES TRANSPORTATION SYSTEM
NICN	NAVY ITEM CONTROL NUMBER
NIIN	NATIONAL ITEM IDENTIFICATION NUMBER
NIS	NOT IN STOCK
NMCB	NAVAL MOBILE CONSTRUCTION BATTALION
NMIUW	NAVAL MOBILE INSHORE UNDERSEA WARFARE UNITS
NSN	NATIONAL STOCK NUMBER
ODCL	OPERATORS DAILY CHECKLIST
O&M	OPERATIONS & MAINTENANCE
OMB	OFFICE OF MANAGEMENT AND BUDGET
O&MN	OPERATION & MAINTENANCE, NAVY
OBL AMT	OBLIGATION AMOUNT
OPM	OFFICE OF PERSONNEL MANAGEMENT
OPN	OTHER PROCUREMENT, NAVY
PEB	PRE-EXPENDED BIN
PHIBCB	AMPHIBIOUS CONSTRUCTION BATTALION
PL	PAYLOAD
PM	PREVENTIVE MAINTENANCE
PMO	PROGRAM MANAGEMENT OFFICE
POD	PERMISSIBLE OPERATING DISTANCE
POL	PETROLEUM, OIL, LUBRICANTS
PRT	PORTABLE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PTO	POWER TAKE-OFF
PWC	PUBLIC WORKS CENTER
PWD	PUBLIC WORKS DEPARTMENT
PWRMS	PREPOSITIONED WAR RESERVE MATERIAL STOCK
QDR	QUALITY DEFICIENCY REPORT
RDD	REQUIRED DELIVERY DATE
REQN NO	REQUISITION NUMBER
REQN QTY	REQUISITION QUANTITY
RFI	READY FOR ISSUE

RIC	REPAIRABLE IDENTIFICATION CODE
RPT SYM	REPORT SYMBOL
RJE	REMOTE JOB ENTRY
RMA	RUBBER MANUFACTURERS ASSOCIATION
RMS	RESOURCES MANAGEMENT SYSTEM
ROC	REQUIRED OPERATIONAL CAPABILITIES
RPM	REVOLUTIONS PER MINUTE
SAE	SOCIETY OF AUTOMOTIVE ENGINEERS
SAMMS	SEABEE AUTOMATED MOBILE MANAGEMENT SYSTEM
SBR	SPECIAL BOAT SQUADRON GROUPS
SE	SEA ECHELON
SF	STANDARD FORM
SEABEE	OCCUPATIONAL FIELD XIII (OF-13) PERSONNEL AND ALL PERSONNEL SERVING NCF UNITS
SIM	SELECTED ITEM MANAGEMENT
SKO	NATIONAL STOCK NUMBER (NSN) BREAKDOWN OF SETS, KITS, AND OUTFITS (ILLUSTRATED CATALOG)
SLR	SHOP LABOR RATE
SLWT	SIDE-LOADABLE WARPING TUG
SMIC	SPECIAL MATERIALS IDENTIFICATION CODE
SNSL	STOCK NUMBER SEQUENCE LIST
SOAP	SUPPLY OPERATIONS ASSISTANCE PROGRAM
SOU	SPECIAL OPERATING UNIT
SOUTHNAVFACENGCOM	SOUTHERN DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWESTNAVFACENGCOM	SOUTHWEST DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
SPCC	SHIP PARTS CONTROL CENTER
SRO	SHOP REPAIR ORDER
SUPMIS	SUPPLY MANAGEMENT INFORMATION SYSTEM
TAP	TABLE OF ALLOWANCE (TOA) AS PACKED
TEMC	TRANSPORTATION EQUIPMENT MANAGEMENT CENTER
TEU	TWENTY-FOOT EQUIVALENT UNIT
TM	TECHNICAL MANUALS
TOA	TABLE OF ALLOWANCE
TOE	TABLE OF EQUIPMENT
UCT	UNDERWATER CONSTRUCTION TEAMS
U/I	UNIT OF ISSUE
UIC	UNIT IDENTIFICATION CODE
ULV/ULD	ULTRALOW VOLUME/ULTRALOW DOSAGE
UND	URGENCY-OF-NEED DESIGNATOR
USAF	UNITED STATES AIR FORCE

**APPENDIX C**  
**PREPARATION INSTRUCTIONS FOR**  
**NAVAL CONSTRUCTION FORCE (NCF) AND SPECIAL OPERATING UNITS (SOU)**  
**CESE BIENNIAL ALLOWANCE AND REQUIREMENTS REVIEW (BARR)**

1. **Purpose.** The primary purpose of the BARR is to obtain replacement and shortage requirements and inventory information. All changes to CESE allowances must be initiated via the Requirements Change Request (RCR) process in accordance with the current edition of NAVFACINST 4423.1. Allowance changes must be fully justified on the basis of revised mission, taskings or operations on NAVSUP Form, 1220-2, Allowance Change Request, and endorsed through the appropriate chain of command. Units sharing an Advanced Base Functional Component, a wartime mission and/or related Table of Allowance with another command should initiate changes via the RCR process after coordination and consensus with their respective counterparts.

2. **Biennial Allowance and Requirements Review.** Under the automated Civil Engineer Support Equipment (CESE) Biennial Allowance and Requirements Review (BARR) system, each allowance holder or designated activity will receive a BARR printout (Figure C-1) by 15 June. The BARR printout lists the equipment in the current allowance for that designated activity or allowance holder. The printout is listed by the Allowance EC. Allowance items and suitable substitutes are reflected under the Allowance EC. Equipment that does not fall under an Allowance EC is listed under Unassigned Allowance ECs on the last page of the BARR printout. For each equipment, the printout lists the Equipment Code (EC), USN number, description, manufacturer, model, year, location, assignment codes, and condition code. The printout also provides information about the life expectancy in years, eligible replacement year, authorized allowance, and number of pieces on hand. It also provides space for annotation by the allowance holder about current year requirements, priority, budget year requirements, and remarks. Each activity will review the BARR, annotate any necessary changes, and return the updated report to NFELC prior to 1 October of the biennial year. Every effort will be made to replace equipment in accordance with the needs and priorities identified by the activity within the constraints of equipment availability and budget.

3. **BARR Printout.** A detailed explanation of the CESE Biennial Requirements Review printout follows.

a. **Headings**

(1) **Allowance EC (Equipment Code).** Completed by NFELC Indicates the current authorized EC. The ECs are used to classify equipment by type and technical characteristics. For example: EC 010401 is a standard compact sedan; EC



010402 is the same sedan with air conditioning. The ECs that end in "00" are nonstandard equipment procurements.

(2) DESC (Description). Completed by NFELC. A 40-character description of the allowance EC.

(3) Life Expectancy. Completed by NFELC. The number of years of life expected to be derived from items of that EC. Replacement of an item, however, must be based on its use, condition, and ability to perform. Budget constraints require activities to extend equipment life to its maximum effective use.

(4) Allow QTY (Allowance Quantity). Completed by NFELC. Indicates the current authorized allowance for the EC.

b. Columns

(1) Actual EC. Completed by NFELC. The actual equipment code of the equipment.

(2) USN NO. USN Number. Completed by NFELC. A list of the USN numbers of each piece of equipment under the allowance EC held by the activity.

(3) DESC. Description. Completed by NFELC. A 15-character description of each piece of equipment.

(4) MFG/Model. Manufacturer and Model. Completed by NFELC. The make and model of each USN number.

(5) YR. Year. Completed by NFELC. The year of manufacture of each USN number.

(6) LOC. Location. Completed by NFELC. The current location code of each USN number.

(7) ASSN CD. Assignment Code. Completed by NFELC. The CASE-MIS assignment code for each USN number. Common assignment codes are: M= organic, S= pending survey, A= reassigned.

(8) COND. Condition. Completed by NFELC with information furnished by the activity. Activity annotates to reflect any recent change in condition; overhaul or accident damage could either better or worsen the condition previously reported to NFELC.

(9) YR Overage. The year the USN number is considered overage based on Allowance EC life expectancy.

(10) Excess/Remarks. Completed by activity.

(11) PRI. Completed by the activity. Indicate if the USN number is in excess of the allowance quantity. A priority entry is mandatory for every individual item identified for replacement and for every individual item identified to fill a shortage. Only one list of priorities, inclusive of all replacements and shortages, should be compiled. Priority numbers shall run sequentially from "1" (as the highest priority) through to the total number of equipment line item requirements submitted, and each number shall be used only once. An activity that reports for more than one subordinate activity shall integrate all subordinate activities' priorities so that each number appears only once in the report.

c. Summary

(1) Total EC On Hand. Completed by NFELC. Total of all CESE held by the activity against the allowance EC.

(2) Total Allowance Assigned ECs. Completed by NFELC. Total number of USNs that are assigned to an Allowance EC.

(3) Total Unassigned Allowance ECs. Completed by NFELC. Total number of USNs that are not assigned to an Allowance EC.

(4) Grand Total Equipment Count. The total number of assigned and unassigned USNs.

4. Technical Assistance. Staff technical assistance is available from NFELC shall conduct conferences with Allowance Holders to ensure comprehensive allowance reviews.

RECORD HOLDER: NXXXXX							PROPERTY HOLDER: SEABEES		
ALLOWANCE ECC 036031		DESC TRK 1 ¼ T CARGO		LIFE EXPECTANCY 06		ALLOW QTY 5		ABFC TOA TA XX	
ACTUAL EC	USN NO.	DESC	MFG/ MODEL	YR	LOC	ASS N CD	COND	YEAR REPLACEABL E	EXCESS/REMARKS
036031	94XXXX1	TRK 1 1/4T	FORD	91	N20	A	A5		
036031	94XXXX2	TRK 1 ¼	FORD	92	N20	B	A4		
036031	94XXXX3	TRK 1 ¼ T	FORD	93	N20	C	A4		
032701	94XXXX5	TRK ¾ T	CHEV	90	N20	D	A5	B	SUBSTITUTE
032701	94XXXX6	TRK ¾ T	CHEV	88	N20	E	A6	C	SUBSTITUE/ DUE IN
032701	94XXXX7	TRK ¾ T	FORD	87	N20	F	A6	OA	EXCESS

**Figure C-1. Biennial Allowance and Requirements Review**

## APPENDIX D. ATTACHMENT MANAGEMENT FOR NCFs/SOUs

1. **Objective.** Attachment management follows the same basic principles as USN and USNG number control. Proper registration and management are essential to prevent attachments from becoming separated from the basic machine and lost or inadvertently discarded. Proper stowage and preservation will also help prevent expensive attachments from being rendered useless by oxidation and damage.

2. **Attachment Identification.** Attachments are accessories to construction equipment that enable the basic equipment to perform its function or to add versatility to the equipment. Some attachments are usable with many different types of equipment, whereas some can be used only by a particular make and model machine.

a. **Attachment Codes.** Attachment codes have equipment codes (EC) starting with an alpha character. Attachment identification numbers are provided for permanent positive identification of each attachment. Attachment ID numbers contain three separate segments: (1) prefix, (2) acronym, and (3) sequential number which identify the attachment. The following are examples.

ID Number	Segment	Description
<u>Example A</u>		
255-BH-001	Prefix is 255	Indicates either manufacturer's make and model or attachment size (Table D-1): P&H Model 255-A-TC.
	Acronym is BH	An abbreviation for the noun name of the attachment: backhoe.
	Number is 001	Sequential number assigned by NFELC when the attachment is registered.
<u>Example B</u>		
11-DB-10	Prefix is 11	Attachment size (Table D-1): 2 cubic yards.
	Acronym is DB	An abbreviation: drag bucket.
	Number is 10	Sequential number.

Attachment Identification numbers (Table D-1) are two inches high and shall be permanently welded to that portion of each attachment least subject to normal wear. Where it is not desirable to weld directly on the attachment, as in the case of crane booms and hooks, the ID number shall be welded on a metal plate of appropriate size and then permanently fixed to the attachment.

b. USNG-Numbered ISO Containers. ISO containers are USNG-numbered items which are recorded as attachments and managed like CESE.

3. **Attachment ID Number Assignment.** Attachments to CESE are not assigned permanently Navy numbers until they reach the initial Allowance Holder. Therefore, units may receive attachments that do not have permanent ID numbers. In this event, the following procedures are necessary.

a. ID Number Request. The receiving activity shall request an ID number by initiating an Equipment Attachment Registration Record Card, NAVFAC Form 6-11200/45 (Figure D-1) for each attachment. After this registration card is completed in accordance with the following instructions, two copies shall be submitted to NFELC via the Allowance Holder, if appropriate. Retain one copy in the appropriate equipment history jacket.

Block	Remarks
1	From Column 1 to the Equipment Shipping Specification.
2 thru 12	Self-explanatory.
13 thru 16	If attachment is peculiar to only one type machine, complete these blocks.
17	All items, such as shear-leg, crowd and rehaul assembly, lagging, high and low gantry.
18	USN number to which assigned.
19 and 20	Self-explanatory.
21	NFELC PORT HUENEME will complete.
22	Enter if known; if unknown, NFELC will complete.

### First Segment List of Attachment Identification Numbers

Prefix	Manufacturer	Model		Prefix	Manufacturer	Model
R2	Burch	R2-23		164A	Trojan	164A
5T	Flink	BDWS40		170	Hough	H70D
6	Northwest	6		175	Wain Roy Corp	175B
06	Euclid	06-26		L175B	International	L175B
W7	Case	W7D		200	MRS	200
T8	Caterpillar	D8		201	Killefer	201D
W8	Case	W88		250	International	250
W9	Case	W90S		L250	Lima	250TS
B10	Bucyrus Erie	M108		255	P&H	255-ATC
K10	Koehring (MKT)	DE10		305	Koehring	305-1A
W10	Case	W10D-5		325	P&H	325TC
T15	International	TD-15		335	Koehring	335-2A
L16	Tractomotive Pettibone	TL-16MD		450	Ware	450E
D20	McKiernan Terry	DE-20		500	Baldwin Lima Hamilton	500T
T20	International	T20		600	Warner & Swasey	G600
22B	Bucyrus Erie	22B		604	Lima Locomotive	604
T24	International	TD-24		640	P&H	640
25	Northwest	25		644	John Deere	JD644A
T25	International	TD-25		655	P&H	655A
30	Bucyrus Erie	30B		660	Warner & Swasey	G660
32	Lorain (THEW)	MC-32M		T725	Bantum Koehring	T725A
37	Bay City	37		955	P&H	955A
Q43	Quick Way	MCM43		970	Melrose	
44	Baldwin Lima Hamilton	44-SC		2460	Warner & Swasey	M-2460
50	Hough	H50C		3616	International	3616
K50	Hanson Pettibone	50TK		3636	International	3636
T50	Oliver	550		4625	Vibrator Compactor	4625
T55	Caterpillar	955H		8240	Euclid	
65	Baldwin Lima Hamilton	65		FAX	Silent Hoist	FAX
70	Linkbelt	HC-70		JD	John Deere	
T70	Oliver	770		MBF	Miller	5508
72	Terex GMC	72-31FL		PN	Pontoon (No Mfr)	
V72	Essick	V-72-M		RF	Rockland	RF-3
80	Northwest	80D		RG	Ray GO	
100	Garwood	100-BT		TV	Buffalo Springfield	
103	Fieco Corp			VR	Vibra Plus	CH-43
103MC	Eimco			WR	Wain Roy Corp	
118	Galion	118T		YIW	Young Iron Works	
110	Pettibone					
Alternate first segment of ID number when attachments are buckets or other nonpeculiar items						
Prefix	Size			Prefix	Size	
0	No size indicated			8	1-1/4 CY	
1	1/8 CY			9	1-1/2 CY	
2	1/4 CY			10	1-3/4 CY	
3	3/8 CY			11	2 CY	
	1/2 CY			12	2-1/4 CY	
5	5/8 CY			13	2-1/2 CY	
6	3/4 CY			14	Larger than 2-1/2 CY	
7	1 CY					

**Table D-1**

b. **NFELC Verification.** Upon receipt of a NAVFAC Form 6-11200/45, NFELC will verify the information, assign an identification number if required, enter all available data into the CASEMIS inventory system, and return completed copies of the registration card. The attachment ID number shall be placed in the Allowance Holder's inventory in CASEMIS, which then causes an Equipment Identification Load Sheet for the newly registered attachment to be forwarded to the Allowance Holder.

c. **ID Number Permanently Affixed.** Upon receipt of the returned NAVFAC Form 6-11200/45, the custodian shall permanently fix the ID number to the attachment in accordance with paragraph 2. Then the NAVFAC Form 6-1200/45 shall be filed in the equipment history jacket of the vehicle to which the attachment is assigned.

4. **Attachment Inventory Control.** All types of attachments shall be identified and registered on Equipment Attachment Registration Record Cards, NAVFAC Form 6-11200/45 (Figure D-1), as outlined in paragraph 2. These registration cards allow the attachment custodian to maintain an accurate inventory of all assigned attachments. Registered attachments shall also be inventoried in CASEMIS in the same manner as CESE. The Allowance Holder, using CASEMIS, can constantly monitor attachment assignment, location, and condition. As attachments are being registered, they are also being entered into CASEMIS. However, it is possible for Allowance Holders to have attachments with ID numbers that are not entered in CASEMIS. In this event, submit a NAVFAC Form 6-11200/45, as required in paragraph 3, which includes this statement in Block 17: "ID Number already assigned, to be entered in CASEMIS only."

5. **Attachments Status Board.** An Attachments Status Board (Figure D-2) shall be maintained in Cost Control and the Dispatch Office. It will reflect the following information:

- a. Attachment code from CASEMIS equipment code list.
- b. NAVFAC identification number.
- c. Abbreviated description from CASEMIS equipment code list.
- d. The USN number of the equipment to which the Attachment is assigned.
- e. PM Group (same as the equipment to which the Attachment is assigned).
- f. Location and remarks.





6. **Storage and Preservation.** Attachments shall be properly stowed on hardstand (concrete pad, matting), to keep them out of sand, mud, and water, and to allow drainage of rain water from buckets or other areas where water may accumulate. Cover attachments if possible. Attachments and accessories shall be continuously inspected for accountability, proper stowage, and preservation. Stowage shall be accomplished in the following manner.

a. Cables, sheaves, and bolt threads shall be lubricated and preserved as required to ensure that they remain in good condition.

b. Nuts shall be screwed onto the corresponding bolts and located in their respective holes, when possible.

c. Boom pendants shall be attached to the boom extensions; cables shall be coiled, tagged, and attached to clamshell buckets, backhoe, and shovel front attachments, to minimize loss and to expedite the changeover from one operation to another.

d. Attachment accessories such as lagging, bucket teeth, chains, sprockets, and wedges shall be placed in a box or on pallets and marked for the appropriate attachments and stored in Collateral Equipment.

e. Exposed machine surfaces, such as hydraulic rams, and openings into critical areas shall be preserved and covered to prevent deterioration and damage.

f. Hydraulic lines and fittings shall be sealed to prevent dirt and moisture from accumulating in the hydraulic system.

g. Stowage shall be maintained to ensure that all attachments that belong to one USN number are stowed together.

h. Rust will be removed from effected by proper means. Areas will be primed and painted to prevent further corrosion during preventive maintenance cycles.

7. **Attachment Transfer or Disposal.** Prior to action, approval is required from NFELC via the Allowance Holder. Transfer or disposal of equipment attachments shall be accomplished as follows.

a. **Reassignment From One USN Number to Another.** Submit one copy of the updated NAVFAC Form 6-11200/45 to the Equipment Allowance Holder if appropriate. Transfer one copy of the registration card to the new vehicle history jacket. The Allowance Holder must then update CASEMIS.

b. Transfer to Another Activity. Unless otherwise instructed in the shipping directive, all attachments (with accessories) for a particular machine shall be prepared and transferred along with that machine. Put all small attachments with accessories in a box and then attach the box to the vehicle in accordance with Chapter 2, paragraph 2.4.3. The Allowance Holder must then update CASEMIS.

c. Attachment Disposition. Unless otherwise requested on the disposal request, all attachments (with accessories) for a particular machine shall be disposed of along with that machine. After the item has been transferred, the Allowance Holder must update CASEMIS.

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## **APPENDIX E. CONTAINERIZATION PROGRAM FOR NCFs/SOUs**

1. **Containerization.** Containerization is the packing, staging, shipping, and field use of Seabee Table of Allowance (TOA) materials in shipping and storage containers. The containers are built in accordance with International Standardization Organization (ISO) standards. The ISO containers are capable of intermodal shipping via truck, rail, sea, and air, which requires certification with the Convention for Safe Containers (CSC). They are to be used as operating storerooms in the field.

2. **Mobilization And Deployment.** The NCF pre-packed and containerized TOAs are staged to support rapid mobilization and deployment. Mobilization of containers will be by cellular-type ships. Cellular ships are the shipping industry standard and steel ISO containers have replaced the wooden mountout boxes.

3. **Master Packing Plan.** To support the overall requirement of containerizing each TOA, a Master Packing Plan (MPP) was developed to take into consideration the size, weight, and cube of all line items within the TOA. The MPP has an assigned location for each item.

4. **Container Designs And Types.** Total container inventory will consist of five different designs of containers, commonly known as ISO Standard 20s, Flatracks, Half-Heights, TRICONS and SIXCONS.

a. **ISO Standard 20s.** The ISO Standard 20-foot containers are built as two types: bulk and configured.

(1) The **Bulk type** has an open interior and is used for packing bulk items such as skids, wooden boxes, and palletized loads.

(2) The **Configured types** have cabinets installed with various configurations of drawers and shelves. These configurations serve as Store Rooms, Tool Rooms and an Armory. The various cabinetry configurations compose the different NSNs that have been assigned to the containers.

The refrigeration containers have open interiors and are self-cooling with their own generator power source.

b. **Flatracks.** Flatracks have open sides and top with fixed end walls. They are used to stow bulk items such as lumber and pipe.

c. Half-Heights. Half-Heights have closed sides and a tail gate end. They are approximately half the height of a standard 20-foot container. They are used for drummed oil/lubricants and steel stocks.

d. TRICON. TRICONS are one third of a standard 20-foot container. They are built as two types. Three can be linked together with connectors to form a Twenty-Foot Equivalent (TEU) and fit the envelope of a Standard 20-foot container.

(1) The Bulk type is open and used for packing bulk items such as skids, wooden boxes, and palletized loads.

(2) The Configured types have cabinets installed in various configurations of drawers and shelves. These configurations serve as Store Rooms, Tool Rooms, and an Armory.

e. SIXCON. SIXCONs are one sixth of a Standard 20-foot container. Six can be linked together with connectors to form a Twenty-Foot Equivalent (TEU) and fit the envelope of a Standard 20-foot container. SIXCONs are built in four configurations.

(1) Fuel Tanks with a 900-gallon capacity.

(2) Fuel Pumps which are self-contained with gasoline motor, fuel pump, hoses, and hardware.

(3) Water Tanks with a 900-gallon capacity.

(4) Water Pumps which are self-contained with gasoline motor, water pump, and hardware.

5. General Information. The following are general information items about containers.

a. Standard 20-Foot Container. The Standard 20-foot, Configured Standard 20-foot, and the TRICON containers have an electrical porthole for the electrical lighting assemblies.

(1) ISO Standard 20-foot container. Assembly 07012.

(2) TRICON. Assembly 07011.

b. Configured Container. Each configured container has a total drawer and shelf locking mechanism on the cabinets that prohibits loss or damage of material while in transit.

c. **Bulk Containers.** In the bulk containers tie down points are strategically placed to secure materials.

d. **Forklift Pockets.** Forklift pockets have been provided in both the ISO Standard 20-foot and the TRICON containers.

(1) The forklift pockets found on the 20-foot containers are to be used only if moving an empty container and only with 8-foot long forklift tines. The refrigeration containers do not have forklift pockets and are not to be moved with forklifts.

(2) Forklift pockets on TRICONS can be used on empty and packed containers.

6. **ISO Container Requirements For A NMCB.** The ISO container requirements for a NMCB are:

a.	Standard 20 foot	71 each
b.	Flatracks	14 each
c.	Half-Height	5 each
d.	TRICONS	15 each
e.	SIXCONS	45 each
f.	Refrigeration	2 each

**NOTE:** See *Technical ISO Container Data (Table E-1)* for size, weight, and other technical information on each container.

7. **Container Weight Handling Equipment.** Container weight handling equipment includes cranes and forklifts.

8. **Container Transport Vehicles.** There are two basic container transport vehicles: a 15-ton stake truck and a 34-ton tractor-trailer combination. Both vehicles can transport all container types. These trucks are general-purpose vehicles which double as container-moving equipment. Both vehicles have limited off-road capability and twist lock devices for quick and safe container tie-down.

9. **Container Handling.** Top and/or Bottom Lift Container handling devices are recommended as the primary and best way to handle containers. They reduce the probability of damage to the containers while moving or handling. The major damage to containers occurs when they are moved.

**NOTE:** Do not use the Container Top Lifting Device with the 14-ton crane. Use only the ISO Bottom Lifting Sling with the 14-ton crane.

10. **Container Moving.** Containers should be loaded or unloaded and staged without hitting, bumping, or rubbing them together. When moving containers, additional personnel are recommended to be used to spot or act as lookouts for operators for safety and to reduce damage. The skins of the containers are constructed of high carbon, corrugated sheet steel and the exterior coat of paint is the container's primary defense from rust and corrosion. Move or handle the containers minimally to reduce possibility of damage.

11. **Container Storage Requirements.** Empty and packed ISO containers may be exposed to diverse climates, environments and methods of inside and outside storage. Covered storage (protection from weather and direct sun) is recommended for all containers, however, this may not always be possible. In all instances where containers (empty or packed) are exposed to direct weather and sunlight, the frequency and type of surveillance on containers must be increased to prevent weather and water damage that could be caused by either leaks or condensation. Hardstands are recommended for all non-temporary storage to insure that containers do not stand for any period of time on uneven, unlevel footing or in water or mud.

a. **Interior Storage.** Interior storage of containers, using either a warehouse or some other form of covering, is recommended for all containers, particularly if they are packed with material. Warehouse or covered storage of a container offers the advantage of increased protection from the elements and decreased maintenance and surveillance costs. Containers are designed and constructed to be waterproof but can leak, causing interior corrosion and possible damage to packed material. Covered storage eliminates these problems. Covered storage also prevents container "weather systems", a phenomenon brought about by alternate heating (daytime) and cooling (nighttime) of the container's interior air, which causes condensation to form on interior surfaces. If left unchecked, the condensation causes corrosion and rust. In tropical, subtropical, and high humidity environments, dehumidified warehouse storage is strongly recommended for containers, particularly for the long-term storage of packed containers.

There are no special interior storage requirements or precautions for packed and sealed containers, other than to insure that the container is not exposed to standing water (dunnage is recommended) and that the containers are accessible for preservation and surveillance. For warehouse or covered storage of empty containers, the doors should be shut, with the vents left open (no interior moisture absorption material) or closed (moisture absorption material present) accordingly. Please refer to appropriate NAVFAC design manuals and shore facilities planning documents for further information on warehouse or covered storage structures.

b. **Uncovered Storage.** Uncovered or exterior storage presents unique and potentially damaging problems for containers and their contents. Uncovered or exterior storage probably will be the only alternative for many activities or units, but there are ways to minimize container damage from the effects of sun, rain, wind, snow, and so forth. Minimize the damaging effects of weather to save maintenance dollars, increase the useful life of a container, and provide increased protection to container contents. The easiest preventive measure is the most obvious; keep the doors shut when the container is not in use. This simple act literally saves thousands of dollars in maintenance costs. When a container is stored outside, orient the doors away from the prevailing wind to prevent water

intrusion from rain or snow. Store containers on dry, level surfaces. Use dunnage to prevent the containers from resting in standing water. Concrete is the best surface for storage. For long-term exterior storage of containers, apply a thin seal of silicon grease along the door seal to prevent water intrusion. A silicon joint sealant may also be used but is recommended only for containers destined for long-term storage. Stacking and cubing containers together minimizes the effects of weather and prevents container "weather systems". Stacking cones, corner lugs, and tie downs are to be used if containers are to be stacked more than two high. Containers can be stacked up to six high; however, this is not a recommended procedure in areas subject to high winds.

When storing packed, sealed containers outside, keep the vents closed at all times. Empty containers stored outside for long periods of time should be sealed with desiccant provided, and vents kept closed at all times. If a container is in operation, the vents can be left open. If a container is damaged, for example, it has a hole in its metal skin, there is rust due to water intrusion, or it has been "racked," make repairs immediately to prevent further damage. A rigorous and thorough preservation and surveillance program should be instituted for stored containers.

c. Hardstand Requirements. Hardstand requirements for ISO containers are of special note due to the unique problems encountered when containers are handled and stored on various operating surfaces. The preferred handling and storage surface is concrete, provided it meets appropriate design specifications for loaded containers. Container storage and handling surfaces are to be durable with good water drainage. Smooth, even surfaces are required to prevent the containers from "racking," especially when loaded or stacked. Generally, asphalt surfaces are not recommended due to their possible damage under the heavy container loads. Asphalt presents dangerous handling problems when material-handling equipment (especially forklifts) sink or penetrate the surfaces under the weight of loaded containers. Other surfaces such as compacted soil, sand or crushed rock can be used on a case-by-case basis. Their use depends on the load bearing capabilities and other characteristics that allow safe, effective container movement and storage. On any surface, dunnage is recommended to prevent standing water damage to the containers.

12. Preservation, Surveillance and Certification. Preservation procedures require that action be taken to protect both the container and its contents from deterioration. Rust and corrosion due to moisture primarily cause deterioration. Scheduled inspection of containers and their contents on a cyclical basis is required to insure that they are adequately protected from the environment. Surveillance serves as a review of the overall container condition. The CSC certification of a container tells a shipper that it is structurally sound, watertight, and compatible with existing shipping modes. Without the proper CSC certification a container is merely a large metal storage box that will be rejected by a shipper.

a. Initial Preservation. The first step in the preservation and surveillance processes of a container is its initial preservation. Initial preservation begins as soon as possible, preferably upon completion of the acceptance inspection, and no later than four weeks following its delivery. Initial preservation procedures are relatively simple and consist of the following six steps:



- (1) Lubricate the electrical porthole cap, door hinges, Cam Locking Devices, and vents, and electrical porthole cap (if it hasn't been replaced with an expansion plug);
- (2) Apply talc powder (MIL-T-39A) to all rubber seals;
- (3) Remove any interior standing water or condensation and repair rusted areas;
- (4) Touch-up painting (primer MIL-P-53022, topcoat MIL-C-46168C) of damaged exterior panels, (GSA catalog has current NSN);
- (5) For configured containers, apply light oil on cabinet locking mechanisms and drawer glide bearings; and
- (6) Coat metal marking plates and door hinges with clear lacquer.

All containers, regardless of condition upon acceptance, require initial preservation without delay. In addition to the initial preservation steps listed above, any repairs necessary to correct damage from shipping or handling should be completed as soon as possible. A container must be completely repaired before it can be considered ready for issue and use.

13. **Surveillance and Preservation of Empty Containers.** Surveillance is a system whereby containers are subject to cyclic, scheduled and special inspection and continuous actions to assure that material is maintained in ready-for-issue condition. After containers have been delivered, accepted, and initially preserved, they can be placed in static storage pending pack-up or shipment for fleet use. Static storage may last for several years and containers may or may not be covered. Covered storage and warehouse storage are the preferred methods of long-term container storage, but are unnecessary if adequate surveillance and preservation is performed. Containers in static storage must be stacked to allow unhindered and complete access for proper surveillance and preservation. The following are guidelines for the surveillance (visual inspection) of empty containers in storage:

- ◆ **Covered storage:** Surveillance cycle is 12 to 60 months (depending on type of covered storage). If standard warehouse cycle is every 48 months; and for controlled humidity warehouse, cycle is every 60 months.
- ◆ **Uncovered storage:** Surveillance cycle is 12 months and Inspection requirements for the interior and exterior.

Water intrusion is the single most destructive element to containers. Frequency of inspection and size of the surveillance sample for uncovered statically-stored containers in tropical and subtropical environments may need to be increased to insure adequate safeguards against this problem. Depending either on the amount of environmental controls exercised or a variety of other factors, inspection frequency and size of container surveillance sample in covered static storage may also need to be increased. It is important to note that the above surveillance and preservation guidelines pertain primarily to the storage of containers in a temperate environment. The importance of repairing leaks and damaged containers as soon as possible to prevent further damage cannot be over-emphasized.

14. **ISO/CSC Certification of Containers.** All NCF and RNCN containers are designed and built to meet the technical standards of the ISO and CSC. Containers are initially ISO certified by their manufacturer and provided with a safety approval plate. The safety approval plate has the original date of ISO certification and other pertinent information. The ISO/CSC certification allows the container to function as an intermodal shipping container that can be loaded and shipped any number of ways. The certification tells the shipper that the container is structurally sound and is compatible with existing shipping modes. Without the ISO/CSC certification a shipping activity may refuse to handle the container. The container may even be impounded by shipping regulation authorities pending certification. The initial certification of a container is valid for 5 years; thereafter, it must be recertified every 30 months. Loaded containers with an expired inspection date cannot be placed aboard a ship. A waiver has been granted by the Coast Guard, which applies to the inspection cycle of containers stored inside a warehouse and packed with TOA material. Internal visual inspection requirements are waived for periodic examinations of these containers while in storage, awaiting deployment. When these containers are placed in normal intermodal transportation, in or outside the United States, all examination requirements, including the internal exam must be completed as part of the periodic inspection examinations no later than every 30 months.

a. Recertification. Recertification requires a visual inspection by an inspector who has successfully completed the Intermodal Dry Cargo Container/CSC Inspection Course given at the U.S. Army Defense Ammunition Center and School. This course is available to all Department of Defense personnel. Recertification of a container is based on the judgment of the inspector, except where tolerances are provided. Rejected containers must be repaired and inspected again prior to issuance of the ISO/CSC certification. For further information on container recertification procedures, refer to OPNAV Instruction 4620.10 and MIL-HDBK-138A, Container Inspection Handbook for Commercial and Military Intermodal Containers. The visual inspection is designed to make the following determinations:

- (1) Is there an approved safety plate attached to the container?
- (2) Is the container structurally sound?
- (3) Do the container's doors operate properly?
- (4) Is there evidence of corrosion or rust, particularly on the container's structural members?
- (5) Does the container have crushed, cut, broken, or bent corners?
- (6) If the container's skin is patched, was it done properly?
- (7) Does the container exhibit floor and roof integrity?
- (8) Have improper repairs or modifications been made to the container?
- (9) Does the container still possess weather-tight integrity?

(10) Is the container properly painted and are labels and markings correct?

15. **Alteration, Repair and Maintenance.** An alteration to a container is defined as any modification, improvement, or change to its basic design or function. Repair and maintenance are the general procedures and methods used to repair and maintain container doors, cabinets, corrugated metal panels and other container components.

a. **Alteration.** An alteration is anything that changes the fit, form or function of a container. Alterations may be as radical as the removal of container cabinetry and doors or burning holes in the container's skin to insert electrical cables and lights. Or they may be as subtle as simply changing a container's exterior color or providing additional specialized markings. Whatever form the modification takes, or however extensive the changes are, they will always alter the fit, form or function of a container or its interior cabinetry.

ISO containers were designed for a specific purpose, and even minor modifications could prevent a container from being used for its designed and intended purpose. Each container is fabricated for intermodal shipping and storage, and a simple modification might prevent it from being accepted as an ISO/CSC certified container. What may appear to be an improvement could actually destroy the container's structural integrity and render it unsafe for shipping purposes. For these reasons, alteration or modification of containers is strictly prohibited without approval from the NFELC Commodity Manager. For further information on ISO container modifications and alteration, please contact the NFELC .

b. **Repair.** Repairs to containers and interior cabinetry are classified as either major or minor. Repairs to damaged corner fittings, corner posts (replaced), roof bows, main rails, cross members, side panels, roof panels, flooring, and cabinetry are defined as major repairs. Repairs to isolated and superficial damage such as punctures of a container's skin or touch up painting are defined as minor repairs.

The purpose of any repair is to restore the container to its original structural integrity and enable it to function as an instrument of international transportation. The repair method selected must always be the most economical for this purpose. Always keep safety in mind when selecting the type of repair. Whenever possible, damaged components should be repaired rather than partly or completely replaced. After repair, the effected area should be of equal or greater strength than the original. Use materials and parts of the same or better quality, strength, and thickness than those used in the original manufacture. A proper repair restores the original size and profile of a component.

The using activity or unit can best perform minor repairs, providing the expertise and materials are available. Please refer to the appropriate technical manual for further discussion, specific guidance, and instructions for minor repairs to containers.

Major repairs are controlled in the same manner as other centrally managed 2C-Cognizance items. If the cost of a repair exceeds 65 percent of the replacement cost, survey the container and order or budget for a replacement. If major repairs to a container are economically justified, have the container repaired by an NNELC CEMB or other activity with the expertise to perform the work. Safety, cost, and the ability to maintain the repaired container's ISO and CSC shipping certification always govern major repairs. The

loss of the ISO certification will prevent the container from fulfilling its primary mission - - intermodal shipping and storage.

c. Maintenance. Under normal conditions, ISO containers require very little preventive maintenance. Moving parts are limited to cam locking devices, door hinges and vents. When a container is in live storage (being used as an active storeroom) it is necessary to inspect container components for corrosion, material deterioration and component lubrication at least once every 3 months. Operation of containers in severe weather, in dusty or sandy areas or near salt water requires more frequent inspection. Maintenance inspection should not be confused with the surveillance and preservation procedures. Surveillance and preservation procedures are designed to keep statically stored containers in a ready-to-use condition. Maintenance procedures are designed to insure that a container in use or in live storage continues to operate properly. Maintenance inspections consist of the following:

(1) Inspect and lubricate cam locking devices, door hinges, vents, container cabinets and drawers. For specific lubrication requirements please refer to the manufacturer's technical specifications. Fouled lubrication should be thoroughly wiped away and replaced with fresh uncontaminated lubricant.

(2) Inspect rubber door seals. Replace deteriorated door seals as necessary.

(3) Inspect for leaks and holes in metal skin. Pay particular attention to the container's roof. Promptly repair any holes in the container.

(4) Wash off exterior of container with fresh water when necessary. In salt water environments this requirement prevents corrosion of metal components.

(5) Use touch-up paint, as necessary, on container skin, metal components, interior cabinets, and the like. If rust and corrosion are present they should be thoroughly removed and bare metal primed prior to touch-up painting.

(6) For configured containers, apply graphite grease to drawer roller bearings as necessary.

(7) Always remove any standing water that has intruded the container. Repair rusted or corroded areas promptly.

16. **Center Of Balance And Gravity Determination.** The Naval Construction Force Tactical Embarkation Manual, COMSECONDNCEB/COMTHIRDNCEB Instruction 3120.1, recommends various methods to determine the Center of Balance or Gravity (COB/G). If some methods, such as the "rolling log" are used to determine the center of balance or gravity of a container, serious damage will occur to the side rails and under carriage of the container. Care must be taken in all field operations to prevent damage. The Container Operations Manual, NAVFAC P-1051, details a weighing method to determine the COB/G.

a. Additional COB/G Methods. NFELC will provide advice and additional methods to determine COB/G upon request by contacting NFELC.

17. **Air Certification.** All Naval Construction Force ISO Containers, Standard 20s, TRICONS, Half-Heights, Flatracks, and SIXCONs have been "Air Certified" by the U.S. Air Force Headquarters.

a. **Aircraft Load Master.** The Aircraft Load Master checks an ISO container certification and does not relate to the contents, weight distribution, or the load security within the container.

b. **Responsibility.** The shipper is responsible for contents, weight distribution and security within the container, and in all instances, must be satisfactory to the individual Aircraft Load Master.

18. **Bar Code System.** Bar code technology is applied to the NCF containerization pack ups. The bar coded labels are used to designate locations and to identify the material within the containers. The location labels on the cabinetry are based on the Master Packing Plan (MPP). Issue/Release Document Forms (IRDF) are placed with the material to provide bar coded NSN and Stock Data Identification of each item within the location. Bar Code NSN and Location Data Labels are used to mark and control each line item. The bar code labels are used for Inventory Management and the Integrated Logistics Overhaul (ILO) Program.

19. **Technical Manuals.** Technical manuals for Standard 20s and TRICONS are available and provided upon issue of the containers. Additional manuals can be ordered from Supply, NNFELC PORT HUENEME Port Hueneme, CA.

Standard 20	NSN 7610-LL-Z8A-6366
TRICON	NSN 7610-LL-Y8A-6366
SIXCON/Water	NSN 7610-LL-L26-6490
SIXCON/Fuel	NSN 7610-LL-L26-6480

**TABLE E-1. Technical ISO Container Data**

National Stock Number/Navy Item Control Number	CASEMIS Equip-ment Code	JCCO Type Code	Type and Style	Configuration	Length x Width x Height Inches	Weight Lbs.
8145-01-287-8567 8145-LL-LCA-0117	XM03CB	2000	TYPE 1/ STYLE 1	STANDARD 20, BULK	238.5x96 x96	5000
8145-01-287-3293 8145-LL-LCA-0121	XM03CA	2009	TYPE 1/ STYLE 2	STANDARD 20, BULK WALL CONFIGURATION../58	238.5x96 x96	8120
8145-01-288-9698 8145-LL-LCA-0122	XM03CN	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 1A/6B	238.5x96 x96	16410
8145-01-289-3367 8145-LL-LCA-0123	XM03CC	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 2A/5B	238.5x96 x96	12600
8145-01-289-3366 8145-LL-LCA-0124	XM03CD	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 3A/2B	238.5x96 x96	12060
8145-01-289-3368 8145-LL-LCA-0125	XM03CE	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 3A/5B	238.5x96 x96	11390
8145-01-290-1382 8145-LL-LCA-0126	XM03CF	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 4A/..	238.5x96 x96	8520
8145-01-289-0944 8145-LL-LCA-0127	XM03CG	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 4A/3B	238.5x96 x96	12720
8145-01-287-3295 8145-LL-LCA-0128	XM03CH	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 4A/4B	238.5x96 x96	13240
8145-288-9697 8145-LL-LCA-0129	XM03CJ	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 4A/5B	238.5x96 x96	13050
8145-01-287-8566 8145-LL-LCA-0130	XM03CK	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 5A/5B	238.5x96 x96	11890
8145-01-288-9696 8145-LL-LCA-0131	XM03CL	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION 6A/1B	238.5x96 x96	16410
8145-01-287-8565 8145-LL-LCA-0132	XM03CM	2009	TYPE 1/ STYLE 2	STANDARD 20 WALL CONFIGURATION ARMORY	238.5x96 x96	13050
8145-01-291-0937 8145-LL-LCA-0172	XM03HH	2005	SHIP/ STORAGE	HALF HEIGHT BULK	238.5x96 x51	3650
8145-01-290-7335 8145-LL-LCA-0173	XM03FR	2064	SHIP/ STORAGE	FLATRACK BULK	238.5x96 x96	6400

**TABLE E-1. Technical ISO Container Data (Continued)**

National Stock Number/Navy Item Control Number	CASEMIS Equip-ment Code	JCCO Type Code	Type and Style	Configuration	Length x Width x Height Inches	Wei-ght Lbs.
8145-01-287-3294 8145-LL-LCA-0116	XM03TB	0608	TYPE II/ STYLE 1	TRICON, BULK	77.5x96x96	2560
8145-01-289-4329 8145-LL-LCA-0133	XM03T1	0609	TYPE II/ STYLE 2	TRICON, WALL CONFIGURATION D1A/D1B	77.5x96x96	5200
8145-01-289-0945 8145-LL-LCA-0134	XM03T2	0609	TYPE II/ STYLE 2	TRICON, WALL CONFIGURATION D2A/D2B	77.5x96x96	7310
8145-01-287-8564 8145-LL-LCA-0135	XM03T3	0609	TYPE II/ STYLE 2	TRICON, WALL CONFIGURATION D3C	77.5x96x96	3805
8145-01-287-8563 8145-LL-LCA-0136	XM03T4	0609	TYPE II/ STYLE 2	TRICON, WALL CONFIGURATION ARMORY	77.5x96x96	2850
4320-01-156-3873	525020 XM03PW OLD	0667	PUMP/ WATER MODULE	SIXCON	77.5x96x 47.83	2000
4930-01-240-4579	525021 XM03TF OLD	0667	PUMP/ FUEL MODULE	SIXCON	77.5x96x 47.83	2600
5340-01-203-9971	525021 XM03TW OLD	0670	TANK/ WATER MODULE	SIXCON, 900 GL CAPACITY	77.5x96x 47.83	2640
5340-01-240-4578	525011 XM03TF OLD	0673	TANK/ FUEL MODULE	SIXCON, 900 GL CAPACITY	77.5x96x 47.83	2640

## **APPENDIX F. REPLACEMENT AND REPAIR DATA**

### **REPLACEMENT CRITERIA AND REPAIR LIMITS FOR ALPHA CODES O-Z**

1. Life Expectancies. Age or mileage expectancies, furnished in the CASEMIS descriptive reference table, are to be used when considering Civil Engineering Support Equipment (CESE) for replacement or overhaul and retention. The age eligibility and mileage expectancies applicable to automotive vehicles have been derived from administrative use motor vehicle replacement criteria published by DoD for use by all military departments. The life expectancies have been prepared from the criteria for application to all vehicles in Navy use, including those chassis used for specialized type vehicles. They should not be used for specialized type equipment mounted on the vehicle. Age expectancies of construction, railway, and weight handling equipment shown in the CASEMIS descriptive reference table are to be used to determine the basic zone of eligibility; these age expectancies do not have the same value as the age tables for automotive vehicles. Construction, railway, and weight handling equipment have a considerably lower use rate and are not as affected by age as automotive vehicles. Unreliability, obsolescence, and major repair costs are the prime considerations for replacement of such equipment.

2. P-1 Line Items XA, XB, XC, XH, XJ, XG, and 31 identify Transportation Equipment Program items. In order to compile a comprehensive index of all NAVFAC Equipment Code numbers, the following P-1 Line Items have been included which represent specialized equipment designed for a specific function and which are not included in the Shore Activities Transportation Equipment Replacement Program under the procedures set forth in paragraph 2.8.

<u>P1-96</u>	Ships' Waste and Oil Pollution Abatement Equipment Cognizant Agency: NAVFACENGCOM Environmental Quality Division
<u>P1-97</u>	Specialized Equipment Cognizant Agency: Claimant receiving benefits of equipment
<u>P1-98</u>	ABC Warfare Disaster Preparedness Decontamination Equipment Cognizant Agency: NAVFACENGCOM Contingency Planning Division
<u>P1-99</u>	Mobile Utility Support Equipment (MUSE) Cognizant Agency: NAVFACENGCOM Facilities and Utilities Engineering Division

3. Claimants requiring specialized equipment will administer and fund for their procurement and replacement through the agencies shown, where applicable.



4. Refer to the latest edition of the CASEMIS descriptive reference table for NAVFAC 15-character Abbreviated Description, Expanded Long Description, DoD Alpha Code, LIRN, Life Expectancy and other pertinent information. These descriptions will be used in all CESE transactions.

5. Activities should contact their TEMC for the latest edition of the CASEMIS descriptive reference table.

6. The following chart is provided to assist activities in determining the allowable one-time repair limits for alpha code O thru Z Transportation Equipment.

EXAMPLE:

To determine the one time repair cost limit for a five (5) year old wrecker truck (EC 0729), with a EIGHT (8) year life expectancy and an original procurement cost of \$66,244 dollars: Using the chart, the number 5 (present age) intersects with 43 (percent factor) on the life expectancy line of 8yrs. Multiply \$66,244 (procurement cost) by .43 (percent factor) which equals \$28,484.92. The one-time total repair costs shall not exceed \$28,484.92.

Vehicle: 0729 Truck Wrecker

Present Age: 5YRS

Life Expectancy: 8YRS

Percentage Factor: .43

Original Procurement Cost: \$66,244

$$\begin{array}{r} \$66,244 \\ \times .43 \\ \hline \$28,484.92 \end{array}$$

(Do not exceed \$28,484.92 for TOTAL Repair Cost)

## **COMPUTATION FACTORS FOR USE IN REPAIR DETERMINATIONS**

For Alpha Codes O thru Z Transportation Equipment

		PRESENT EQUIPMENT AGE (YRS.)																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
L I F E  E X P E C T A N C Y	3YRS	75	48	20																						
	4YRS	75	57	38	20																					
	5YRS	75	61	47	33	20																				
	6YRS	75	64	53	42	31	20																			
	7YRS	75	65	56	47	38	29	20																		
	8YRS	75	67	59	51	43	35	27	20																	
	9YRS	75	68	61	54	47	40	33	26	20																
	10YRS	75	69	63	57	51	45	39	33	24	20															
	11YRS	75	70	65	60	55	50	44	36	32	26	20														
	12YRS	75	70	65	60	55	50	45	40	35	30	25	20													
	13YRS	75	70	65	60	55	50	45	40	36	32	28	24	20												
	14YRS	75	71	67	63	59	55	51	47	43	38	32	28	24	20											
	15YRS	75	71	67	63	59	55	51	47	43	39	35	31	26	23	20										
	16YRS	75	71	67	63	59	55	51	47	43	39	35	32	29	26	23	20									
	17YRS	75	71	67	63	59	55	51	47	44	41	38	35	32	29	26	23	20								
	18YRS	75	71	67	63	59	56	53	50	47	44	41	38	35	32	29	26	23	20							
	19YRS	75	72	69	66	63	60	57	54	51	48	45	42	39	36	33	30	27	24	20						
	20YRS	75	72	69	66	63	60	57	54	51	48	45	42	39	36	33	30	27	24	22	20					
	21YRS	75	72	69	66	63	60	57	54	51	48	45	42	39	36	33	30	28	25	24	22	20				
	22YRS	75	72	69	66	63	60	57	54	51	48	45	42	39	36	34	32	30	28	26	24	22	20			
	23YRS	75	72	69	66	63	60	57	54	51	48	45	42	40	38	36	34	32	30	28	26	24	22	20		
	24YRS	75	72	69	66	63	60	57	54	51	48	46	44	42	40	38	36	34	32	30	28	26	24	22	20	
	25YRS	75	72	69	66	63	60	57	54	52	50	48	46	44	42	40	38	36	34	32	30	28	26	24	22	20

PERCENTAGE FACTOR

**TRANSPORTATION EQUIPMENT CODE INDEX**  
**AND TABLE OF LIFE EXPECTANCIES FOR AUTOMOTIVE VEHICLES**  
**AND CONSTRUCTION EQUIPMENT**

The following table is provided as a quick reference only. The principal system designed to document and promulgate the latest changes to the classification of transportation equipment is the Construction, Automotive and Specialized Equipment Management Information System (CASEMIS) Equipment Code (EC) Descriptive Reference Table.

NAVFAC EC CODE	GSA EC CODE	ALPHA CODE	DESCRIPTION	SHORE LIFE	NCF LIFE	LIFE IN MILES
0061	3240	B	BUS BOC 20 PASS 16000 GVW	8	9	84,000
0063	3244	B	BUS BOC 36-60 PASS 25500 GVW	8	9	84,000
0065	3256	C	BUS BOC 44 PASS 27500 GVW	10	11	150,000
0066		F	BUS AMBULANCE CONV FC 8-12 LITTER R/LOAD	10	11	150,000
0070		D	BUS 44-49 PASS DED 6X2 INTERCITY	12	12	300,000
0090		P	SEMITRAILER W/PAS CONVERSION 14000 GVW	15	15	
0102	1100	A	SEDAN MIDSIZE 5 PASS 4 DOOR	6	7	72,000
0104	1200	A	SEDAN COMPACT 5 PASS 4 DOOR	6	7	72,000
0104S	1225	A	SEDAN COMPACT SECURITY	6	7	72,000
0105		A	SEDAN LARGE 5 PASS 4 DOOR	6	7	72,000
0114	1125	A	SEDAN COMPACT POLICE	6	7	72,000
0126		O	SEDAN SPECIAL PURPOSE	6	7	72,000
0200		E	STATION WAGON LARGE	6	7	72,000
0210	2100	E	STATION COMPACT 5 PASS 4 DOOR	6	7	72,000
0305	6100	H	TRUCK UTILITY COMM 4X4 4500 GVW	6	7	72,000
0305	6140	H	TRUCK UTILITY COMM 4X4 4500 GVW SECURITY	6	7	72,000
0307		O	TRUCK UTILITY 4X4 3500 GVW MILITARY	6	9	72,000
0308	4100	H	TRUCK UTILITY 4500 GVW	6	7	72,000
0308	4140	H	TRUCK UTILITY 4500 GVW SECURITY	6	7	72,000
0313	4250	G	TRUCK CARGO PICKUP 6000 GVW	6	7	72,000
0316	6250	G	TRUCK CARGO PICKUP 4X4 6000GVW	6	7	72,000
0317	6275	H	TRUCK CARRYALL 6 PAS 4X4 7000 GVW	6	7	72,000
0319	4120	G	TRUCK CARGO PICKUP COMPACT 4X2	6	7	72,000
0320		Q	TRUCK MULTISTOP F/C 4000 GVW	6	7	72,000
0321		G	TRUCK CARGO PICKUP COMPACT 4X4	6	7	72,000
0327	4381	H	TRUCK CARGO PICKUP 4 DOOR 8800 GVW W/STAKE	6	7	72,000
0327	4352	H	TRUCK CARGO PICKUP 4 DOOR 8800 GVW	6	7	72,000
0329	4210	H	TRUCK PANEL F/C GED TO 6200 GVW W/WINDOWS	6	7	72,000
0329	4211	H	TRUCK PANEL F/C GED TO 6200 GVW MINI	6	7	72,000
0329	4110	H	TRUCK PANEL F/C GED TO 6200 GVW	6	7	72,000

NAVFAC EC CODE	GSA EC CODE	ALPHA CODE	DESCRIPTION	SHORE LIFE	NCF LIFE	LIFE IN MILES
0330	4215	H	TRUCK VAN F/C 8 PASS GED	6	7	72,000
0330	4315	H	TRUCK VAN F/C12 PASS GED	6	7	72,000
0330	4315	H	TRUCK VAN F/C 15 PASS GED	6	7	72,000
0330	4115	H	TRUCK VAN F/C 7 PASS GED	6	7	72,000
0331		F	TRUCK AMBULANCE VAN PATIENT TRANSPORT	6	7	72,000
0332		F	TRUCK AMB FIELD 4 LITTER 4X4 10500 GVW	8	8	72,000
0333		F	TRUCK AMBULANCE CONV COM 2 LITTER FC	8	8	72,000
0334		F	TRUCK AMBULANCE MODULAR BODY 2 LITTER	8	8	72,000
0336	4344	O	TRUCK PANEL PADDY WAGON	6	7	72,000
0342	4350	I	TRUCK CARGO PICKUP 8500 GVW	8	8	84,000
0343	4380	I	TRUCK STAKE 8500 GVW	7	8	84,000
0345	4366	I	TRUCK MULTISTOP 9400 GVW	7	8	84,000
0348	6350	I	TRUCK CARGO PICKU 4X4 8500 GVW	7	8	84,000
0355	6352	I	TRUCK CARGO PICKUP 6M 4 DOOR 4X4 8800 GVW	7	8	84,000
0360		J	TRUCK CARGO 4X4 M880 8500 GVW	7	8	84,000
0361		F	TRUCK AMBULANCE 4X4	8	14	84,000
0362	4365	I	TRUCK F/C HI-CUBE 9200-10,000 GVW	7	7	84,000
0420	7700	J	TRUCK MULTISTOP 14000 GVW	7	8	84,000
0445	7204	J	TRUCK STAKE GED/DED 16000 GVW	7	8	84,000
0449		J	TRUCK VAN GED 16000	7	8	84,000
0455		J	TRUCK STAKE 4X4 16000 GVW	7	8	84,000
0523	7810	K	TRUCK DUMP 3 CY DED 19000 GVW	8	9	84,000
0525	7210	K	TRUCK STAKE DED 19000 GVW	7	8	84,000
0527	7410	K	TRUCK VAN 19000 GVW	7	8	84,000
0528	8611	K	TRUCK STAKE 4X4 DED 28000 GVW	7	8	84,000
0536		O	TRUCK VAN 6X6 19000 GVW	7	8	84,000
0539		O	TRUCK CARGO 6X6 19000 GVW	8	12	84,000
0570		O	TRUCK AMPHIBIAN LARC-5 4X4 5 TON	8	10	84,000
0582	8710	M	TRUCK STAKE 6X4 DED 34500 GVW	10	11	84,000
0587		O	TRUCK DUMP 6X6 30000 GVW	10	10	150,000
0588		O	TRUCK CARGO 5 TON 6X6 MIL	10	10	84,000
0590	7510	M	TRUCK VAN REFRIGERATOR 24000 GVW	10	11	150,000
0591		O	TRUCK CAB & CHASSIS MIL 6X6 30000 GVW	10	11	150,000
0601		M	TRUCK CAB & CHASSIS DED 24000 GVW	10	11	150,000
0602	8051	M	TRUCK DUMP 5 CY 28000 GVW	10	11	150,000
0603	8510	M	TRUCK STAKE DED 24000 GVW	10	11	150,000
0604		M	TRUCK TRACTOR DED 24000 GVW	10	11	150,000
0605	8530	M	TRUCK VAN DED 24000 GVW	10	11	150,000
0607		M	TRUCK TRACTOR 6X6 36000 GVW	10	10	150000
0614	8562	M	TRUCK TRACTOR DED 32000 GVW	10	11	150,000
0616		O	TRUCK TRACTOR YARD SPOTTER DED	10	10	150,000
0630	8760	M	TRUCK TRACTOR 6X4 43000 GVW	12	12	300,000
0631	8750	M	TRUCK DUMP 6X4/6X6 39000 TO 45000 GVW	12	12	300,000

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0636	8810	M	TRUCK STAKE 6X4 DED 43000GVW	12	12	300,000
0638		M	TRUCK TRACTOR 6X6 46000 GVW	12	12	300,000
0643		N	TRUCK STAKE 6X6 DED 46000 GVW	12	12	150,000
0644	8751	N	TRUCK DUMP 10 CY 6X4/6X6 DED 52000 GVW	12	12	300,000
0645	8761	N	TRUCK TRACTOR 6X4/6X6 52000 GVW	12	12	300,000
0649	8762	N	TRUCK TRACTOR 6X4/6X6 DED 62000 GVW	12	12	300,000
0701		O	TRUCK CARGO AMPHIB CRWLR/PRT	7	8	84,000
0704		O	TRUCK AMMO W/HY CRANE 4X2.4X4 24000GVW	10	10	84,000
0705		Q	TRUCK AIRFIELD CONTROL TOWER MOBILE	7	8	84,000
0707		Q	SCOTTER AIRFIELD MAINTENANCE	7	8	72,000
0708		O	TRUCK PLATFORM UTIL GED/EMD 4 WHL	4	6	24,000
0709		O	TRUCK FIELD SERVICING	8	8	84,000
0710		O	TRUCK FIELD SERVICING	8	8	84,000
0713		O	TRUCK TIRE SERVICING TACTICAL	10	10	84,000
0714		O	TRUCK TIRE SERVICING COMMERCIAL	10	10	72,000
0715		O	TRUCK MULTIPURPOSE P/L CONST 19000 GVW	8	12	84,000
0722	4155	O	TRUCK MAINT TEL/UTIL 4X2 Compact	7	10	84,000
0722	4255	O	TRUCK MAINT TEL/UTIL 4X2 6000-8400 GVW	7	10	84,000
0722	4213	O	VAN TRUCK MAINT TEL/UTIL 4X2 6000 GVW	7	10	84,000
0722	4313	O	VAN MAINT TEL/UTIL 4X2 8500 GVW	7	10	84,000
0722	4113	O	TRUCK MAINT TEL/UTIL 4X2 4000 GVW	7	10	84,000
0722	4355	O	TRUCK MAINT TEL/UTIL 4X2 8500 GVW	7	10	84,000
0722	6355	O	TRUCK MAINT TEL/UTIL 4X4 8500 GVW	7	10	84,000
0723		O	TRUCK MAINTENANCE POLE & LINE DED	10	10	84,000
0725		O	TRK OVRHD MAINT AERIAL SERV PLTFM	10	10	84,000
0726		O	TRUCK OVERHEAD MAINT AERIAL SERV PLTFM	10	10	84,000
0727		O	TRUCK RESCUE/COMMAND RESPONSE VEHILCE	10	10	84,000
0728		O	TRUCK VAN HAZARDOUS SPILL CLEANUP	10	10	84,000
0729		O	TRUCK WRECKER	8	10	84,000
0730		O	TRUCK WRECKER TACTICAL	8	10	84,000
0731		Q	TRUCK LDR AC HI-LIFT DED	10	10	84,000
0735		O	TRUCK REEL HANDLING/TENSIONING POWERED	10	10	300,000
0743		Q	TRUCK TANK AVIATION LUBE 200-599 GALLON	7	10	84,000
0746		O	TRUCK TANK GEN PURP TACTICAL	8	12	84,000
0751		O	TRUCK TANK FUEL SERVICING 2000-2999 GAL	10	11	150,000
0756		Q	TRUCK TANK AVGAS/JETFUEL 5000 GAL & UP	12	12	300,000
0757		O	TRUCK TANK WATER 1000-1499 GALLON	10	10	84,000
0758		O	TRUCK TANK POTABLE WATER 2000-2999 GAL	10	11	150,000
0802		P	TRAILER CARGO 2 WHEEL ¾ TON PAYLOAD	15	15	
0804		P	TRAILER CARGO 2 WHEEL 1-1/2 TON PAYLOAD	15	12	
0809		P	SEMITRAILER LOWBED HYDRAULIC DROP DECK	15	15	
0812		P	SEMITRAILER STAKE 12 TON PAYLOAD	15	15	
0813		P	SEMITRAILER VAN 1 AX 12 TON	15	15	
0816		P	SEMITRAILER STAKE 2 AXLE 20 TON PAYLOAD	15	15	
0817		P	SEMITRAILER VAN 2 AXLE 20 TON PAYLOAD	15	15	

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0819		P	SEMITRAILER VAN REFRIGERATOR 12 TON	15	12	
0820		P	SEMITRAILER VAN REFRIGERATOR 20 TON	15	12	
0822		P	SEMITRAILER LOWBED 4 WHEEL 20 TON	15	15	
0823		P	SEMITRAILER LOWBED 4 WHEEL 25 TON	15	15	
0825		P	SEMITRAILER LOWBED 4 WHEEL 35-40 TON	15	15	
0826		P	SEMITRAILER LOWBED 50 TON	15	15	
0827		P	SEMITRAILER LOWBED 60 TON	15	15	
0829		P	DOLLY TRAILER CONVERTER	15	15	
0832		P	TRAILER LOWBED FORKLIFT TRANSP 6-9T	15	15	
0842		P	TRAILER BOLSTER PIPE/POLE	15	15	
0843		P	TRAILER CABLE REEL OR POLE	15	15	
0848		T	TRAILER OR SEMITRAILER DUMP REFUSE	15	15	
0853		P	TRAILER MISCELLANEOUS EXHIBITION 40 FT	15	15	
0862		P	TRAILER OR SEMITRAILER TILT DECK	15	15	
0880		P	TRAILER TANK 2 WHL 400 GAL	15	15	
0881		P	TRAILER TANK GENERAL PURPOSE 500 GALLON	15	15	
0882		P	TRAILER TANK 2 OR 4 WHEEL 600 GAL	15	15	
0883		P	TRAILER TANK 2 OR 4 WHEEL TO 500 GAL	15	15	
0886		P	SEMITRAILER TANK 2000-4000 GALLON UP	15	15	
0890		P	SEMITRAILER TANK 5000 GAL AND UP	15	12	
0891		Q	SEMITRAILER TANK AVGAS 4000 GAL AND OVER	15	12	
0892		P	SEMITRAILER TANK 6000 GAL AND OVER GP	15	12	
0905		Z	SCOOTER MOTOR PACKAGE DELIVERY 3-4 WHEEL			
2120		T	CONCRETE BATCH PLANT 150 CY	10	12	
2200		T	CRUSHER ROCK & SCREENING PLANT PORTABLE	8	12	
2210		T	WASHING AND SCREENING PLANT AGGREGATE	6	7	
2220		T	FEEDER AGGREGATE GRIZZLY OR WOBBLER	6	7	
2300		T	PAVER ASPHALT DED/GED	8	10	
2410		T	MIXER ASPHALT	8	10	
2417		T	MIXER ROTARY SOIL STABILIZER	8	10	
2420		S	MIXER CONCRETE TRUCK MOUNTED	6	8	
2425		S	MIXER CONCRETE MOBILE TRUCK/TRAILER MTD	10	10	
2433		S	MIXER CONCRETE PORTABLE 11 CU FT GED	8	9	
2434		T	MIXER CONCRETE PORTABLE 16 CU FT	8	11	
2462		T	SPRAYING MACHINE CONCRETE	6	10	
2470		T	SAW CONCRETE HYDROSTATIC DRIVE DED/GED	4	6	
2520		T	DISTRIBUTOR ASPHALT TRK/TRLR MTD TACTICAL	8	10	
2521		T	DISTRIBUTOR WATER TRUCK/TRAILER MTD	10	12	
2522		T	DISTRIBUTOR ASPHALT TRUCK/TRAILER MTD	8	10	
2523		T	DISTRIBUTOR WATER TRUCK/TRAILER MTD	10	12	
2540		T	SPREADER CHIP AGGREGATE 12 FT TOWED	10	12	
2610		T	CONVEYOR W/HOPPER W/GRIZZLY OR SCREEN	10	12	
2620		T	PUMP CONCRETE PLACING DED/GED	6	7	
2740		T	KETTLE HEATING BITUMEN SKID/WHEEL MTD	8	9	
2750		T	TANK ASPHALT TRUCK/TRAILER MOUNTED	12	14	

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2760		T	KETTLE HEATING JOINT SEAL 75 GAL TRLR MTD	6	8	
2840		T	GROUTER MUD JACK SKID/WHEEL MTD DED	6	7	
3110		S	COMPRESSOR AIR 125 CFM PORTABLE	6	7	
3111		S	COMPRESSOR AIR TRACTOR MTD 125 CFM PRT	6	7	
3135		S	COMPRESSOR AIR 250 CFM PORTABLE	8	10	
3155		S	COMPRESSOR AIR 365 CFM PORTABLE	8	10	
3165		S	COMPRESSOR AIR 600 CFM & OVER PORTABLE	8	10	
3532		S	DRILL ROCK TRACK MTD	6	10	
3630		T	HAMMER PILE DIESEL FUEL POWERED W/LEADS	10	12	
3635		T	EXTRACTOR PILE	10	12	
3710		S	AUGER EARTH SKID/WHEEL/TRUCK MTD	8	10	
3720		S	DRILL WELL WATER ROTARY/PERCUSSION	7	12	
3730		S	CLEANER DRILLING FLUID DESILTER TRLR MTD	7	12	
4230		S	CRANE CRAWLER DED 7-20 TON	10	14	
4240		S	CRANE CRAWLER DED 21-30 TON	10	14	
4250		S	CRANE CRAWLER DED 31-40 TON	10	14	
4260		S	CRANE CRAWLER DED 41-60 TON	12	14	
4270		S	CRANE CRAWLER DED 61-75 TON	12	14	
4310		S	DITCHING MACHINE WHEEL TYPE	7	10	
4320		T	ROOTER ROAD OR HARROW DISC DRAWN	8	9	
4330		S	EXCAVATOR MULTIPURPOSE TRK MTD	10	12	
4340		S	EXCAVATOR WHEEL MTD HYD OPERATED	10	12	
4350		S	EXCAVATOR CRAWLER MTD HYD OPERATED	10	12	
4410		T	GRADER ROAD TOWED	8	9	
4420		S	GRADER ROAD MOTORIZED DED	8	10	
4530		S	LOADER SCOOP FULL-TRACKED BUCKET/DOZER	7	12	
4531		S	LOADER SCOOP WHEEL MOUNTED 4X4	7	12	
4532		S	LOADER SKID STEER	7	9	
4615		S	ROLLER MOTORIZED SELF-PROPELLED	7	10	
4620		T	ROLLER SHEEPSFOOT TAMPING TOWED	10	11	
4621		T	ROLLER GRID TOWED	12	15	
4622		S	ROLLER GRID/SEGMENTED SELF-PROPELLED	12	15	
4630		S	ROLLER ROAD TANDEM SELF-PROPELLED	10	11	
4635		S	ROLLER ROAD VIBRATORY SELF-PROPELLED	10	12	
4750		S	SCRAPPER-TRACTOR INTG S-P 1-2	7	12	
4760		S	DUMP OFF-HIGHWAY TRK 15-50T 9-30 CY CAP	8	12	
4805		S	DUMP END TRACTOR W/TRAILER	7	10	
4820		S	TRACTOR CRAWLER DED 35-49 HP	8	12	
4830		S	TRACTOR CRAWLER DED 105 HP	10	14	
4840		S	TRACTOR CRAWLER DED 140 HP	10	14	
4850		S	TRACTOR CRAWLER DED 195 HP	10	14	
4851		S	TRACTOR CRAWLER DED 300 HP	10	12	
4874		U	TRACTOR WHEEL IND <40 HP	6	7	
4875		U	TRACTOR WHEEL IND GED PRT 50-70 HP	6	7	

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4877		U	TRACTOR WHEEL IND DED 90 HP	6	7	
4891		S	TRACTOR WHEEL INDUSTRIAL 7800-14K PDBP	7	7	
4893		S	TRACTOR WHEEL INDUSTRIAL 20001-27K PDBP	7	8	
4894		Q	TRACTOR WHEEL INDUSTRIAL 34K PDBP	7	8	
5110		T	FLOODLIGHT SET ELEC TRUCK/TRLR MTD	8	10	
5120		T	GEN SET SKID/TRK/TRLR GED/DED 5-9KW	8	9	
5121		T	GENERATOR SET SKID/TRLR GED/DED 10-15KW	8	10	
5122		T	GENERATOR SET SKID/TRLR GED/DED 16-59KW	10	10	
5124		T	GENERATOR SET SKID/TRLR GED/DED 60-100KW	10	12	
5125		Z	GENERATOR SET SKID/TRLR GED/DED 101-150K	10	12	
5128		Z	GENERATOR SET SKID/TRLR GED/DED 151-250K	10	12	
5160		Z	LUBRICATING UNIT POWER OPERATED SKID MTD	6	10	
5170		S	WELDER ELEC ARC SKID/TRLR/TRK MTD	6	8	
5405		S	CLEANER VACUUM LEAF/LITTER TRLR MTD	6	7	
5408		Q	CLEANER VACUUM SELF-PROPELLED AIRFIELD	6	7	
5409		S	CLEANER BASIN/MANHOLE VAC/HYD TRUCK MTD	6	7	
5410		Z	CLEANER STEAM WHL/SKID MTD	4	6	
5412		S	CLEANER PIPE/SEWER AUG PWR OP TRLR MTD	6	7	
5413		T	CLEANER SCRAPER PORTABLE	4	5	
5414		S	CLEANER SEPTIC TANK/CESSPOOL TRUCK MTD	6	7	
5416		S	CLEANER PIPE/SEWER WATER JET TRK MTD	6	7	
5418		T	CLEANER WATER BLAST 10000 PSI W/SAND INJ	6	8	
5420		Z	SPRAYER DECONTAMINATE SKD/TRK/TRLR MTD	8	12	
5421		Z	SPRAYER PEST/INSECT PORTABLE GED	5	6	
5460		Z	PLATFORM MAINTENANCE	10	10	
5500		Q	FUEL SERVICING UNIT AIRCRAFT TRLR MTD	8	12	
5700		S	SWEEPER OR SCRUBBER INDUST >42 IN SWATH	6	7	
5710		S	SWEEPER STREET MAGNETIC S-P/TOWED	7	10	
5720		S	SWEEPER ROTARY S-P PICKUP	7	8	
5740		S	SWEEPER ROTARY TOWED REV BROOM	7	10	
5745		T	SWEEPER ROTARY TOWED SNOW AIRBLAST A/F	10	8	
5750		T	SNOWPLOW TRK MTD ROTARY S-C UNIT	10	8	
5757		T	SNOWPLOW ROLLOVER TRUCK MOUNTED	10	8	
5760		T	TRK SNOW REMOVAL MULTIPURPOSE 4X4 DED	10	8	
5790		T	SANDER SELF CONTAINED STREET TRK MTD	10	11	
5795		T	SANDER STREET TRK MOUNTED/TOWED	8	9	
5820		S	TRK REFUSE COLLECT COMP SIDE/REAR LOAD	8	9	
5830		S	TRUCK MAT HNDLG CHAIN HOIST/HAUL	8	9	
5831		S	TRUCK MAT HNDLG HOIST FORKLIFT TYPE	7	8	
5833		S	TRUCK MAT HNDLG HOIST/HAUL TO 45 CU YD	7	8	
5835		S	TRUCK REFUSE COLLECT-COMPACT W/HOIST	8	9	
5840		T	SEMITRAILER/TRAILER REFUSE COLLECTION	12	12	
5842		T	SEMITRAILER REFUSE COLLECTION COMPACT	12	12	
5900		T	SAW RADIAL ARM WOODWORKING	15	12	



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5910		T	SHOP MACHINE MOBILE SEMITRLR MTD	15	15	
6100		V	CAR RAILWAY MISCELLANEOUS SERVICE	28		
6110		V	CAR RAILWAY BOX	28		
6120		V	CAR RAILWAY FLAT STANDARD	28		
6130		V	CAR RAILWAY GONDOLA SOLID BOTTOM	25		
6140		V	CAR RAILWAY HOPPER SIDE/BOTTOM DUMP	25		
6150		V	CAR RAILWAY DUMP AIR/MANUALLY OPERATE	25		
6160		V	CAR RAILWAY FLAT DEPRESSED CENTER	25		
6210		W	CAR RAILWAY MOTOR MAINTENANCE-OF-WAY	15	15	
6220		W	CAR RAILWAY INSPECTION AND MAINTENANCE	15	15	
6222		W	TAMPER SELF-PROPELLED RR TIE/BALLAST	12	12	
6230		W	CAR RAILWAY MOTOR MAINT-SECTION GANG	15	15	
6240		W	CAR SPOTTER ROAD-RAILER PRT SELF-PROP	15	15	
6250		W	CAR RAILWAY AUTO-RAILER	12	15	
6340		V	CAR RAILWAY CABOOSE	28		
6370		V	CAR RAILWAY COACH	28		
6400		V	CAR RAILWAY TANK GENERAL PURPOSE	28		
6530		W	LOCOMOTIVE RAILWAY 40-59 TON CLASS	25		
6540		W	LOCOMOTIVE RAILWAY 60-69 TON CLASS	25		
6545		W	LOCOMOTIVE RAILWAY 70-80 TON CLASS	25		
6550		W	LOCOMOTIVE RAILWAY 81-100 TON CLASS	25		
6560		W	LOCOMOTIVE RAILWAY 101 TON & UP CLASS	25		
6570		W	MOVER CAR RAILWAY 30000 LB DBP	15	15	
6580		W	LOCOMOTIVE RAILWAY MINE	25		
6600		Z	RAILWAY MAINTENANCE EQUIPMENT MISC	12	12	
7100		X	TRUCK FIRE CRASH MISCELLANEOUS	7	8	
7102		X	TRUCK A/C CRASH FIRE RESCUE W/TWIN AGENT	7	8	
7160		X	TRUCK A/C CRASH RESCUE 1000 GAL CAPACITY	8	9	
7180		X	TRUCK A/C FIREFIGHTING/ RESCUE 1500 GAL	12	12	
7190		X	TRUCK A/C CRASH FIRE RESCUE 3000 GAL CAP	12	12	
7195		X	TRUCK A/C CRASH FIRE RESCUE 6000 GAL CAP	12	12	
7200		X	PUMP FIREFIGHTING TRAILER MTD 500 GPM	8	9	
7225		X	AGENT RE-SUPPLIER TRUCK/TRAILER MTD	8	9	
7230		X	FOAMER/AGENT RE-SUPPLIER TRAILER	12	12	
7300		X	TRUCK FIREFIGHTING MISC MOUNTED EQUIP	12	12	
7320		X	TRUCK FIREFIGHTING PUMPER 750 GPM	12	12	
7321		X	TRUCK FIREFIGHTING STRUCTURAL PUMPER	12	12	
7322		X	TRUCK FIREFIGHTING MINI PUMPER	12	12	
7330		X	TRUCK FIREFIGHTING FOAM GENERATING	12	12	
7331		X	TRUCK FIREFIGHTING STRUCTURAL FOAM PUMP	12	12	
7341		X	TRUCK FIREFIGHTING BRUSH/GRASS	12	12	
7351		X	TRUCK FIREFIGHTING STRUCT W/TOWER	12	12	
7400		X	TRUCK FIREFIGHTING AERIAL LADDER TYPE	15	15	
7500		X	TRAILER FOAM GENERATOR SELF-POWERED	10	11	

NAVFAC EC CODE	GSA EC CODE	ALPHA CODE	DESCRIPTION	SHORE LIFE	NCF LIFE	LIFE IN MILES
8160		Y	CRANE STADDLE-CARRY 150T PRT DED	8	9	
8200		Y	CRANE TRUCK MTD 2-ENG PRT 5-14 TON	8	9	
8205		Y	CRANE TRUCK MTD 2-ENG PRT 15-24 TON	10	10	
8210		Y	CRANE TRUCK MTD 2-ENG PRT 25-30 TON	10	12	
8215		Y	CRANE TRUCK MTD 2-ENG PRT 31-40 TON	10	12	
8218		Y	CRANE TRUCK MTD 2-ENG PRT 41-50 TON	10	12	
8219		Y	CRANE TRUCK MTD 2-ENG PRT 51 TON & UP	10	12	
8220		Y	CRANE CRUISER MTD 1 2-ENG PRT 5-100 TON	10	12	
8230		Y	CRANE CRUISER MTD 1-ENG PRT 11-30 TON	12	12	
8232		Y	CRANE CRUISER MTD 1-ENG PRT 31-40 TON	12	12	
8233		Y	CRANE CRUISER MTD 1-ENG PRT 41-50 TON	12	12	
8235		Y	CRANE CRUISER MTD 1-ENG PRT 61-80 TON	12	12	
8241		Q	CRANE CRASH NON-REVOL S-P (A/C SHIP)	10	11	
8242		Q	CRANE CRASH NON-REVOL S-P (INTEGRAL)	10	11	
8243		Q	CRANE WHL TRACTOR MTD CRASH HELICOPTER	10	11	
8246		Y	CRANE TRUCK MTD HYD DED 20-50 TON	10	12	
8249		Y	CRANE TRUCK MTD HYD DED 51 TON & UP	10	12	
8253		Y	CRANE WHL MTD SWING CAB 4X4 15 TON& UP	10	12	
8254		Y	CRANE WHL MTD HYD BOOM 4X4 12-35 TON	10	12	
8420		Y	CRANE RAILWAY LOCO 31-50 TON	25	25	

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## **APPENDIX G. MAINTENANCE BUDGET AND MAN-HOUR STANDARDS**

1. **Scope.** These guidelines provide a uniform system for the preparation of a planned transportation maintenance budget. The budget should become an operational plan with scheduled periodic performance evaluation. The input standards contained in Table G-1 provide for all the direct man-hours of labor required for transportation maintenance expenses.

2. **Budget Preparation.** A realistic transportation maintenance budget should be developed by using the following five information elements: (1) vehicle/equipment requirements and usage in terms of units, miles driven, or hours operated; (2) man-hour input standards; (3) shop labor rate; (4) standard material cost per hour of labor; and (5) overhead labor. To adequately account for all maintenance man-hours, it is necessary to include equipment in Alpha Code "Z". Since man-hour inputs are not provided for "Z" equipment, these man-hours should be collected from historical data, or from NAVCOMPT Form 2168 under Cost Account Code (CAC) 6440. In order to ensure adequate staffing/man-hours for work performed on other activity equipment, CAC 6460 should also be included. However, as this is a reimbursable CAC, a deduction should be made on the NAVCOMPT 2168 budget submission. Activity Transportation Division Directors should follow claimants' budget guidance instructions for details of budget preparations. Figure G-1 is a sample worksheet which should be used in preparation of the transportation maintenance budget plan. Activities that have converted their A-N vehicles to GSA should consider the fixed and variable cost (mileage rate) during the budgeting process.

a. **Equipment Requirements and Usage.** The accuracy of the budget will depend to a large degree upon how well the vehicle/equipment requirements and usage can be projected. Analysis of the automotive and construction equipment historical utilization data in each Equipment Code (EC) should provide sufficient information to project equipment requirements and usage for the budget period. It is recognized that variables such as mission changes and funding level changes must be considered.

b. **Man-Hour Input Standards.** The man-hour input standards contained in Table G-1 cover the direct labor necessary to maintain a unit in a safe and reliable condition throughout its economic service life. These standards include the necessary labor hours to lubricate, service, install tires and batteries, as well as remove, replace, and repair major and minor components, subassemblies, parts, and accessories to correct or prevent malfunctions or deterioration except those resulting from accidents. The standards do not cover extensive one time major overhaul or rebuild of the complete unit of equipment.

c. Computation of Man-Hour Input from Standards. The recommended procedure for determining direct maintenance man-hour input for budget projection (plan) is to list inventory quantities by EC sequence summarized by Cost Account Code (CAC). Using Table G-1 of this Appendix, select the established man-hour input standard for each specific EC in inventory. List unit target miles, hours, and leave column blank for those ECs with annual man-hour input standards. There will be three separate computations/formulas for determining the annual budgeted man-hour inputs, depending upon whether the equipment standard man-hour input per mile, hour, or annual unit basis. Examples of computations are as follows:

(1) MAN-HOUR INPUT (STANDARD) PER 1,000 MILES OPERATED

<u>CAC</u>	<u>EC</u>	<u>Unit Inventory</u>	<u>Man-hour target mile/hr</u>	<u>Annual budget input std.</u>	<u>man-hours</u>
62A4	0104	20	12,000 Miles	2.40 per 1,000 mi	576
<u>Formula</u> $\frac{12,000 \times 20 \times 2.40}{1,000} = 576$					

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(2) MAN-HOUR INPUT (STANDARD) PER HOUR OPERATED

<u>CAC</u>	<u>EC</u>	<u>Unit Inventory</u>	<u>Man-hour target mile/hr</u>	<u>Annual budget input std.</u>	<u>man-hours</u>
64S0	4851	2	1,050 Hours	.422 per hr	886
<u>Formula</u> $1,050 \times 2 \times .422 = 886$					

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(3) MAN-HOUR INPUT (STANDARD) PER UNIT/YEAR

<u>CAC</u>	<u>EC</u>	<u>Unit Inventory</u>	<u>Man-hour target mile/hr</u>	<u>Annual budget input std.</u>	<u>man-hours</u>
64P0	0816	6	1 year	17 per unit/year	102
<u>Formula</u> $6 \times 17 = 102$					

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d. Shop Labor Rate. The shop labor rate used in budget preparation should include acceleration for leave and other fringe benefits and a projected cost of living

increase. (This information should be provided by the local comptroller.) The shop labor rate can be developed by dividing the labor cost/dollars by the direct labor hours for the maintenance branch using the most recent labor and material cost report plus a projected acceleration factor.

Example: Total direct labor cost for the Maintenance Branch = \$96,000  
18,000 man-hours of direct labor = \$5.33 average labor rate + 33 percent fringe benefits  
+ 8 percent cost of living increase = \$7.52 shop labor rate.

e. Material Cost Factor Per Hour of Labor. A material cost factor for each hour of direct labor shall be developed locally, using cost data from the latest annual transportation cost report. To determine the material cost factor for each hour of direct labor, divide the total annual material cost reported for the maintenance branch by the reported direct labor hours. The material cost factor should be escalated to allow for price increases anticipated in the budget year.

Example: Total direct material for the maintenance branch = \$64,500  
13,500 man-hours of direct labor = \$4.78 X 1.07 (7 percent cost escalation) = \$5.11  
activity developed material factor per labor hour.

f. Maintenance Overhead. The total overhead hours under CAC 6900 should not exceed 32 percent of the direct productive standard hours for the maintenance branch. Considering normal staffing, overhead labor is based on a ratio of 2 overhead personnel to 10 direct personnel with direct labor personnel effective for 91 percent of available 1,728 annual direct labor hours.

Formula:

- (1)  $2 \times 1,728 = 3,456$  indirect/overhead available labor hours
- (2)  $10 \times 1,728 = 17,280$  direct labor hours
- (3)  $17,280 \times .91 = 15,724$  effective direct labor hours
- (4)  $17,280 - 15,724 = 1,556$  indirect/overhead for production labor
- (5)  $3,456 + 1,556 = 5,012$  total indirect/overhead hours
- (6)  $\frac{5012}{15,724} \times 100 = 32$  percent indirect to direct hours

g. Budget Computation. Sample worksheet for the direct labor and material budget is shown in Figure G-1 Part A. The following are the appropriate column entries:

COLUMN (1) EQUIP. CODE. List NAVFAC Equipment Code (EC).

COLUMN (2) INVENTORY. Enter inventory on hand.

COLUMN (3) ESTIMATED MILES/HOURS. Enter estimated miles or hours to be operated in budget year.

COLUMN (4) MAINTENANCE MAN-HOUR INPUT STANDARDS. Enter maintenance man-hour input standard from Table G-1.

COLUMN (5) ANNUAL BUDGET MAN-HOURS. Compute total annual maintenance man-hours by multiplying Column (3) by Column (4).

COLUMN (6) SHOP LABOR RATE. Enter the shop labor rate. To compute the shop labor rate follow instructions contained in paragraph 2.d.

COLUMN (7) LABOR DOLLAR. Enter the total labor dollar for each equipment code entry. This entry is obtained by multiplying Column (5) by Column (6).

COLUMN (8) MATERIAL COST FACTOR. Enter activity-developed material cost factor. To obtain this entry follow procedures outlined in paragraph 2.e.

COLUMN (9) MATERIAL COST. Enter the total material cost for each equipment code entry. This entry is obtained by multiplying Column (5) by Column (8).

COLUMN (10) TOTAL LABOR AND MATERIAL. Enter the total labor and material cost for each equipment code entry by adding Column (7) and Column (9).

h. Budget Computation. (Indirect labor and material) Sample worksheet for indirect labor and material budget is shown in Figure G-1 Part B. The following are the appropriate column entries:

COLUMN (1) COST ACCOUNT. Enter the appropriate Cost Account Code (CAC) for each function. The CACs are listed by categories in the NAVSO P-1000-3.

COLUMN (2) FUNCTION. Enter position title for indirect functions requested.

COLUMN (3) MAN-YEARS. Enter the total man-years required for each indirect function listed.

COLUMN (4) MAN-HOURS. Enter the total man-hours for each indirect function. Compute on the basis of 1,728 hours for each full time indirect employee and add hours required for direct personnel performing indirect/overhead functions.

COLUMN (5) LABOR RATE. Enter labor rate for each entry. Take the average base pay for listed titles, add fringe benefits and projected cost of living increase.

COLUMN (6) LABOR COST. Enter total labor dollars for each entry. This entry is obtained by multiplying Column (4) by Column (5).

COLUMN (7) MATERIAL COST. Enter the estimated cost of material for each indirect entry.

i. Budget Control. Effective budget control depends on management receiving timely feedback information that will enable the manager to isolate his problem areas, make proper decisions, and initiate the necessary corrective action. Such information must relate performance against the resources plan (budget) and established standards. The Navy Resources Management System (RMS) as set forth in NAVSO P3006-1, Financial Management of Resources, provides these reports on a monthly basis as an output from the activity financial management reporting system. These reports are as follows:

(1) Performance Statement (NAVCOMPT 2169). This report is the transportation manager's major tool for control. The report compares actual performance and expenditure data with the budget plan, and indicates the percent expended to date. It compares work units achieved to date with the planned work units, and compares actual unit cost data with standard or budgeted unit cost. This information is provided for each line item in the budget. The transportation manager can then detect deviations from the budget plan and initiate the necessary action to determine the cause of the deviation. Should a further data breakout of specific elements of expenditure be required, the NAVCOMPT 2168 Operating Budget/Expense Report described in the following paragraph should be used.

(2) Operating Budget/Expense (NAVCOMPT 2168). This report provides a detail breakout of the cumulative line item expenditures shown on the NAVCOMPT 2169. This report provides the manager with data to determine what element of cost is causing the deviation from the budget plan. Actual man-hour expenditures per mile, for example, can be computed and compared with the standard used in the budget plan. A similar analysis can be done for material expenditures.



TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
0061	B	7.00	X			0316	G	2.80	X		
0063	B	7.00	X			0317	H	3.50	X		
0065	C	11.20	X			0319	G	2.80	X		
0066	C	11.20	X			0320	O	29			X
0070	D	11.20	X			0321	G	2.80	X		
0090	P	45			X	0322	H	3.50	X		
0095	O	42			X	0324	O	35			X
0098	O	42			X	0327	H	3.50	X		
0099	O	42			X	0329	H	3.50	X		
0102	A	2.40	X			0330	H	3.50	X		
0103	A	2.40	X			0331	F	5.90	X		
0104	A	2.40	X			0332	F	5.90	X		
0105	A	2.40	X			0333	F	5.90	X		
0114	A	2.40	X			0334	F	5.90	X		
0200	E	2.40	X			0335	H	3.50	X		
0202	E	2.40	X			0336	O	63			X
0210	E	2.40	X			0340	O	55			X
0303	O	35			X	0342	I	4.40	X		
0305	H	3.50	X			0343	I	4.40	X		
0307	O	35			X	0345	I	4.40	X		
0308	H	3.50	X			0347	J	4.80	X		
0310	O	28			X	0348	I	4.40	X		
0311	H	3.50	X			0349	I	4.40	X		
0312	H	3.50	X			0350	I	4.40	X		
0313	G	2.80	X			0355	I	4.40	X		
0315	H	3.50	X			0360	O	58			X

TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
0361	F	5.90	X			0550	O	91			X
0362	I	4.80	X			0570	O	246			X
0409	O	48			X	0580	M	9.20	X		
0410	O	48			X	0582	M	9.20	X		
0420	J	4.80	X			0587	O	92			X
0426	J	4.80	X			0588	O	92			X
0428	J	4.80	X			0590	M	191			X
0430	O	48			X	0591	O	96			X
0441	J	4.80	X			0601	M	9.20	X		
0443	J	4.80	X			0602	M	9.20	X		
0445	J	4.80	X			0603	M	9.20	X		
0449	J	4.80	X			0604	M	9.20	X		
0450	J	4.80	X			0605	M	9.20	X		
0455	J	4.80	X			0606	M	9.20	X		
0456	J	4.80	X			0607	O	92			X
0457	J	4.80	X			0610	O	92			X
0520	O	62			X	0613	M	9.20	X		
0521	K	7.00	X			0614	M	9.20	X		
0523	K	7.00	X			0616	O	92			X
0525	K	7.00	X			0618	O	92			X
0527	K	7.00	X			0620	M	9.20	X		
0528	K	7.00	X			0624	M	9.20	X		
0534	O	70			X	0630	M	9.20	X		
0536	O	70			X	0631	M	9.20	X		
0537	O	70			X	0636	M	9.20	X		
0539	O	70			X	0638	N	11.20	X		

TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
0643	N	11.20	X			0742	O	34			X
0644	N	11.20	X			0743	Q	.017		X	
0645	N	11.20	X			0744	Q	.023		X	
0649	N	11.20	X			0746	O	48			X
0701	O	260			X	0750	Q	.034		X	
0704	O	42			X	0751	O	70			X
0705	Q	.019		X		0753	O	92			X
0707	Q	.027		X		0754	O	92			X
0708	O	35			X	0756	Q	.044		X	
0709	O	239			X	0757	O	48			X
0711	O	36			X	0758	O	70			X
0713	O	70			X	0802	P	3			X
0714	X	.034		X		0803	P	7			X
0715	O	70			X	0804	P	3			X
0719	O	25			X	0806	P	6			X
0720	O	25			X	0807	P	4			X
0721	O	28			X	0809	P	20			X
0722	O	28			X	0811	P	20			X
0723	O	204			X	0812	P	17			X
0725	O	127			X	0813	P	20			X
0728	O	55			X	0815	P	17			X
0730	O	39			X	0816	P	17			X
0731	Q	.019		X		0817	P	20			X
0733	O	127			X	0818	P	15			X
0734	O	34			X	0819	P	28			X
0735	O	100			X	0820	P	34			X

TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
0821	P	17			X	0859	P	17			X
0822	P	20			X	0860	P	11			X
0823	P	22			X	0862	P	11			X
0825	P	24			X	0864	P	11			X
0826	P	28			X	0865	Q	.003		X	
0827	P	34			X	0868	P	11			X
0828	P	48			X	0871	P	6			X
0829	P	4			X	0872	P	3			X
0832	P	9			X	0873	P	7			X
0833	P	7			X	0874	P	4			X
0834	P	8			X	0875	P	7			X
0842	P	11			X	0876	P	5			X
0843	P	6			X	0878	P	17			X
0844	P	11			X	0879	P	11			X
0845	P	3			X	0880	P	4			X
0846	P	4			X	0881	P	5			X
0847	Q	.817		X		0882	P	8			X
0848	T	34			X	0883	P	4			X
0849	Q	.002		X		0884	P	8			X
0851	P	8			X	0885	P	31			X
0852	P	3			X	0886	P	11			X
0853	P	11			X	0888	P	14			X
0855	P	11			X	0890	P	31			X
0856	P	11			X	0891	Q	.027		X	
0857	P	8			X	0892	P	34			X
0858	P	5			X	0893	Q	.005		X	

TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
0896	Q	.005		X		1600	R	.024		X	
0897	P	11			X	1610	R	.028		X	
0899	P	3			X	1800	R	.081		X	
1100	R	.057		X		1810	R	.210		X	
1110	R	.062		X		1820	R	.106		X	
1120	R	.041		X		1830	R	.210		X	
1200	R	.090		X		1840	R	.122		X	
1210	R	.123		X		1850	R	.231		X	
1220	R	.045		X		1860	R	.231		X	
1230	R	.077		X		1870	R	.276		X	
1240	R	.057		X		1900	R	.070		X	
1300	R	.099		X		2110	T	158			X
1310	R	.150		X		2120	T	70			X
1320	R	.098		X		2200	T	383			X
1330	R	.150		X		2210	T	98			X
1340	R	.160		X		2220	T	10			X
1350	R	.123		X		2325	T	3			X
1360	R	.050		X		2340	T	12			X
1370	R	.055		X		2415	T	88			X
1380	R	.056		X		2417	T	88			X
1390	R	.043		X		2420	S	.028		X	
1400	R	.070		X		2425	T	600			X
1410	R	.029		X		2432	S	.024		X	
1420	R	.038		X		2433	S	.027		X	
1430	R	.099		X		2434	S	.043		X	
1500	R	.138		X		2462	T	244			X

TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
2470	S	.043		X		4320	T	7			X
2520	S	.146		X		4330	S	.400		X	
2521	S	.113		X		4340	S	.500		X	
2542	T	164			X	4410	T	8			X
2610	T	28			X	4420	S	.244		X	
2620	T	164			X	4530	S	.288		X	
2720	T	118			X	4531	S	.182		X	
2735	T	17			X	4532	S	.182		X	
2750	T	14			X	4610	T	10			X
3110	S	.043		X		4615	S	.193		X	
3111	S	.064		X		4620	T	8			X
3135	S	.108		X		4621	T	8			X
3155	S	.108		X		4622	S	.316		X	
3160	S	.210		X		4625	T	13			X
3165	S	.210		X		4630	S	.112		X	
3532	S	.195		X		4635	S	.140		X	
3630	T	123			X	4640	S	.169		X	
3710	S	.079		X		4730	T	25			X
3720	S	.281		X		4731	T	34			X
4230	S	.210		X		4750	S	.363		X	
4240	S	.491		X		4760	S	.259		X	
4250	S	.540		X		4805	S	.260		X	
4260	S	.664		X		4820	S	.126		X	
4270	S	.701		X		4830	S	.210		X	
4305	T	7			X	4840	S	.280		X	
4310	S	.175		X		4850	S	.417		X	

TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
4851	S	.422		X		5411	T	5			X
4860	S	.092		X		5413	T	8			X
4872	U	.092		X		5414	S	.175		X	
4873	U	.101		X		5416	S	.153		X	
4874	U	.111		X		5460	Z	.127			X
4875	U	.118		X		5500	Q	.069		X	
4876	U	.127		X		5515	T	17			X
4891	S	.168		X		5628	U	.135		X	
4892	S	.231		X		5643	U	.008		X	
4893	S	.441		X		5650	U	.016		X	
4894	Q	.472		X		5720	S	.288		X	
5110	T	17			X	5740	T	25			X
5120	T	21			X	5745	T	125			X
5121	T	24			X	5750	T	214			X
5122	T	33			X	5757	T	272			X
5123	T	35			X	5790	T	112			X
5124	T	53			X	5820	S	.179		X	
5128	T	75			X	5830	S	.238		X	
5170	S	.069		X		5831	S	.252		X	
5171	S	.148		X		5833	S	.209		X	
5220	T	13			X	5835	S	.228		X	
5230	T	15			X	5840	T	74			X
5240	T	22			X	5842	T	77			X
5405	S	.130		X		5900	T	5			X
5408	Q	.217		X		5910	T	5			X
5409	S	.223		X		6100	V	11			X

TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
6110	V	15			X	7175	X	.385		X	
6120	V	9			X	7180	X	.609		X	
6130	V	19			X	7190	X	.609		X	
6140	V	19			X	7195	X	.609		X	
6150	V	25			X	7200	X	.069		X	
6160	V	14			X	7225	X	.069		X	
6210	W	.029		X		7230	X	.016		X	
6220	W	.020		X		7300	X	.098		X	
6222	T	70			X	7310	X	.084		X	
6230	W	.034		X		7320	X	.105		X	
6240	W	.063		X		7321	X	.210		X	
6340	V	20			X	7322	X	.210		X	
6370	V	56			X	7330	X	.210		X	
6400	V	10			X	7340	X	.112		X	
6530	W	.185		X		7341	X	.126		X	
6540	W	.281		X		7351	X	.210		X	
6545	W	.021		X		7400	X	.210		X	
6550	W	.561		X		7500	X	.057		X	
6560	W	.701		X		8160	Y	.336		X	
6570	W	.125		X		8200	Y	.351		X	
6580	W	.042		X		8205	Y	.351		X	
7100	X	.094		X		8210	Y	.421		X	
7102	X	.084		X		8215	Y	.505		X	
7103	X	.070		X		8218	Y	.808		X	
7105	X	.056		X		8219	Y	.948		X	
7160	X	.445		X		8220	Y	.266		X	



TABLE G-1  
TRANSPORTATION MAINTENANCE MAN-HOUR INPUT STANDARDS

NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours				NAVFAC Equip. Code	Alpha Code	Maintenance man-hour input Standard hours			
		Man-hours	Per					Man-hours	Per		
			1,000 Miles	Hour	Unit (annual)				1,000 Miles	Hour	Unit (annual)
8230	Y	.293		X		8249	Y	.771		X	
8232	Y	.497		X		8250	Y	.448		X	
8233	Y	.692		X		8252	Y	.245		X	
8235	Y	.790		X		8253	Y	.203		X	
8241	Q	.983		X		8254	Y	.161		X	
8242	Q	.878		X		8410	Y	.392		X	
8243	Q	.570		X		8420	Y	.448		X	
8246	Y	.386		X		8430	Y	.525		X	

## **APPENDIX H**

### **FORMS**

#### **TEMC-DEVELOPED FORMS AVAILABLE VIA THE LANTDIV TEMC WEBSITE**

- A. DESCRIPTION/JUSTIFICATION FOR NON-STANDARD FAMILY CESE PROCUREMENT
- B. CRANE REQUIREMENTS DATA SHEET
- C. TRACTOR DATA SHEET (USER REQUIREMENTS)
- D. CASEMIS INVENTORY AND REGISTRATION LOAD SHEET
- E. GSA FORM 525- PROPERTY TRANSFER AUTHORIZATION
- F. **DISPATCH LOG**

#### **STANDARD FORMS AVAILABLE ON THE WEBSITE OR THAT CAN BE ORDERED**

- G. SAMPLE CONSTRUCTION EQUIPMENT OPERATOR'S LICENSE (NAVFAC 11260/2)
- H. APPLICATION FOR CONSTRUCTION EQUIPMENT OPERATOR'S LICENSE
- I. CONSTRUCTION EQUIPMENT OPERATOR LICENSE RECORD (NAVFAC 11260/3)
- J. OPERATOR'S INSPECTION GUIDE AND TROUBLE REPORT (NAVFAC 9-11240/13)
- L. MAINTENANCE INSPECTION/SERVICE RECORD (NAVFAC 11200/46)
- M. OPERATOR'S DAILY PM REPORT, CONSTRUCTION AND ALLIED EQUIPMENT
- N. EQUIPMENT REPAIR ORDER (NAVFAC 11200/41A)

**Navy forms may be ordered directly from Navy Forms-online at the following website:**  
**<http://forms.daps.mil/>. Where assistance is needed, call 877-327-7226.**

### SAMPLE ECONOMICAL ANALYSIS

	<b>Inventory</b>	<b>Current</b>
<b>Requesting Activity/UIC</b>	<b>Objective</b>	<b>Inventory</b>
<b>Naval Air Station Creekmore N67890</b>	<b>3</b>	<b>3</b>
<b>Activity specific request (Note below)</b>		
1. Vehicle requirement is in direct support of:	<b>Yes</b>	<b>No</b>
- Life Threatening Situation		X
Security/Law Enforcement		
Fire and Medical		
HazMat/Emergency Management		
- Non-Life Threatening Situation	X	
Other		
- Is an Alternative Fuel Waiver required?	X	
Comparable vehicle type not available in AFV		
No alternative fuel sites in operating area		
2. Activity certifies that there is no existing asset to fill this requirement from current fleet inventory. Activity further certifies lower-cost alternatives (i.e. base transit system, privately owned vehicle reimbursements) were considered.	X	
3. Written justification has been reviewed by activity management and meets or exceeds the P-300 requirements for a full time vehicle assignment(s). A copy of the justification will remain on file at the activity with the approved lease authorization.	X	
4. I certify that leasing is the in the best interest of the Navy and the taxpayer. I further attest that I have my commands authorization to make this request on its behalf.		
Name and Position (block below): George Knows, Transportation Manager Telephone: DSN 263-3440		
<b>TEMC APPROVAL: Reply below.</b> Sample 1: reply: Request is approved to lease one sedan. GSA asset is best option but a GSA vehicle is not available to meet need. Task number xxxxxx is assigned. AFV waiver is authorized.		
Name and Position (block below): John Withering, Transportation Specialist Telephone number: DSN 262-4000		

Figure H-1 Economical Analysis

Complete <b>ECONOMICAL ANALYSIS</b> below and submit electronically or fax. Comparing Navy procurement vs. comm. or GSA lease For NWCF customers, see Note #1 below			
<b>WORKSHEET</b>	<b>Navy</b>	<b>Commercial</b>	<b>GSA</b>
ENTER Type Vehicle	Sedan	Sedan	Sedan
ENTER Applicable Equipment Code	0104	0104	1200
ENTER Acquisition cost (CASEMIS)	\$15,000	NA	NA
ENTER Life expectancy in mileage (CASEMIS)	72000	NA	NA
Enter Salvage value where applicable (see note #1below)	20%	NA	NA
ENTER Expected annual mileage	22000	22000	22000
ENTER Annual allowed mileage (commercial lease)	NA	20000	NA
ENTER Excess cost per mile (commercial lease)	NA	0.10	NA
ENTER Fuel cost per gallon	\$1.45	\$1.45	NA
ENTER Fixed lease cost per month	NA	\$237	168
ENTER GSA cost per mile (mileage charge)	NA	NA	0.12
ENTER Estimated maintenance/material cost	\$600	\$600	NA
ENTER Vehicle miles per gallon (Fed standard)	27	27	27
<b>DON'T ENTER DATA IN BELOW CELLS</b>			
<b>Cost per mile comparison</b>	<b>Navy</b>	<b>Commercial</b>	<b>GSA</b>
Operating cost per mile	0.054	0.054	0.120
Maintenance cost per mile	0.027	0.027	NA
Excess mileage cost per mile	NA	0.009	NA
Depreciation cost per mile	0.167	NA	NA
Comm lease cost per mile	NA	0.129	NA
GSA fixed cost per mile	NA	NA	0.092
Total Cost Per Mile	0.248	0.219	0.212
			<b>BEST</b>

**Note 1:** Salvage value of 20% applies for appropriated funded activities and for passenger carrying vehicles in support of Navy Working Capital Funded activities.

**Note 2:** This analysis is available via the TEMC website and developed using Excel.

Raw data entry is required; otherwise, the calculations are automatic.

Where problems are encountered, contact the TEMC for support.

**Note 3:** Maintenance CPM is derived based on estimated maintenance cost per year.

H-2 (con't) Economical Analysis

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## **APPENDIX I. TRANSPORTATION EQUIPMENT ITEM CODES**

### **SUPPLY CONDITION CODES**

<b><u>Code</u></b>	<b><u>Title</u></b>	<b><u>Definition</u></b>
A	<u>SERVICEABLE</u> (ISSUABLE WITHOUT QUALIFICATION)	New, used, repaired, or reconditioned material which is serviceable and issuable to all customers without limitation or restriction. Including material with more than 6 months shelf life remaining.
B	<u>SERVICEABLE</u> (ISSUABLE WITH QUALIFICATION)	New, used, repaired, or reconditioned material which is serviceable and issuable for its intended purpose but which is restricted from issue to specific units, activities, or geographical areas by reason of its limited usefulness or short service life expectancy. Includes material with 3 through 6 months shelf life remaining.
C	<u>SERVICEABLE</u> (PRIORITY ISSUE)	Items which are serviceable and issuable to selected customers, but which must be issued before Condition A and B material to avoid loss as a usable asset. Includes material with less than 3 months shelf life remaining.
D	<u>SERVICEABLE</u> (TEST/MODIFICATION)	Serviceable material which requires test, alterations, modifications, conversions or disassembly. This does not include items which must be inspected or tested immediately prior to issue.
E	<u>UNSERVICEABLE</u> (LIMITED RESTORATION)	Material which involves only limited expense or effort to restore to serviceable condition and which is accomplished in the storage activity where the stock is located.
F	<u>UNSERVICEABLE</u> (REPAIRABLE)	Economically repairable material which requires repair, overhaul, or reconditioning includes repairable items which are radioactively contaminated.
G	<u>UNSERVICEABLE</u> (INCOMPLETE)	Material requiring additional parts or components to complete the end item prior to issue.
H	<u>UNSERVICEABLE</u> (CONDEMNED)	Material which has been determined to be unserviceable and does not meet repair criteria, includes condemned items which are radioactively contaminated.
S	<u>UNSERVICEABLE</u> (SCRAP)	Material that has no value except for its basic material content.

### **DISPOSAL CONDITION CODES**

<b><u>Code</u></b>	<b><u>Title</u></b>	<b><u>Definition</u></b>
1	UNUSED-GOOD	Unused property that is usable without repairs and identical or interchangeable with new items from normal supply source.
2	UNUSED-FAIR	Unused property that is usable without repairs but is deteriorated or damaged to the extent that utility is somewhat impaired.
3	UNUSED-POOR	Unused property that is usable without repairs but is considerably deteriorated or damaged. Enough utility remains to classify the property better than salvage.
4	USED-GOOD	Used property that is usable without repairs and most of its useful life remains.
5	USED-FAIR	Used property that is usable without repairs but is somewhat worn or deteriorated and may soon require repairs.
6	USED-POOR	Used property that may be used without repairs, but is considerably worn or deteriorated to the degree that remaining utility is limited or major repairs will soon be required.
7	REPAIRS REQUIRED GOOD	Required repairs are minor and should not exceed 15% of original acquisition cost.
8	REPAIRS REQUIRED FAIR	Required repairs are considerable and are estimated to range from 16% to 40% of original acquisition cost.
9	REPAIRS REQUIRED POOR	Required repairs are major because the property is badly damaged, worn, or deteriorated, and estimated to range from 41% to 65% of original acquisition cost.
X	SALVAGE	Property has some value in excess of its basic material content, but repair or rehabilitation to use for the originally intended purpose is clearly impractical. Repair for any use would exceed 65% of the original acquisition cost.
S	SCRAP	Material that has no value except for its basic material content.

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The FEDERAL CONDITION CODE is composed of two characters, an alphabetic SUPPLY CONDITION CODE and an alpha/numeric DISPOSAL CONDITION CODE.

## **TRANSACTION CODES**

**Transaction Codes.** A transaction code (TC) is a single-digit code to designate the cause of addition, deletion, or correction to inventory records (CASEMIS). (Use in block 54 of DD Form 1342.)

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<b><u>Code</u></b>	<b><u>Definition</u></b>
1	Acquisition - initial receipt of new procurement from other military departments, Government agencies, or commercial sources, including receipt from stock at the Naval Facilities Expeditionary Logistics Centers, Gulfport, Davisville, and Port Hueneme.
2	Acquisition - by transfer from other Navy activities or Navy stocking activities other than those listed in Code 1.
3	Disposition - transfer to another Navy activity or to Navy stocking activity.
4	Disposition - disposition by sale, scrap, donation, loss, or transfer to non-Navy activities.
5	Status Code Change - insert the new status code of the item (TC5 will be used only when a previously reported status code is being changed).
6	Modification - change in description and NAVFAC equipment code.
7	Record Correction - insert "TC7" to indicate that a change is required in the year of manufacture, name of manufacturer, change of item description (without changing equipment code), bureau code, change of DOD code (without changing equipment code), and/or change of state code. This code will not be used for any other corrections.
8	Acquisition - reentry into active use or inventory of an item that was retrieved from a disposal point.
9	Deletion - to report a previously erroneously reported acquisition.



### **STATUS CODES FOR SHORE ACTIVITIES**

<b><u>Code</u></b>	<b><u>Title</u></b>	<b><u>Definition</u></b>
A	RENTED	Leased from commercial source filling Lease IO.
C	CONTRACTED	Contractor operated/Contractor replaced - No IO.
E	CONTRACTOR	Contractor operated/Government replaced - Navy owned IO.
F	LEASE-OWN IO	Commercially leased equipment filling Navy owned IO.
G	GSA RENTAL	GSA leased/rented equipment filling lease IO.
H	REHAB/REASSIGN	Rehabilitation/Service Life Extension Program (SLEP).
I	LEASE-PURCHASE	Leased equipment with option to purchase - Navy owned IO.
K	GSA-OWN IO	GSA leased/rented equipment filling Navy owned IO.
O	OPERATIONAL	Government operated - Navy owned IO.
P	PENDING DISPOSITION	Pending disposal.
Y	REDISTRIBUTE	Pending redistribution.
Z	DISPOSITION	Disposed of equipment.

**STATUS CODES FOR NCFs/SOU's**  
**(Used in block 54 of DD Form 1342)**

<b><u>Code</u></b>	<b><u>Title</u></b>	<b><u>Definition</u></b>
C	CONTRACT	Navy-owned equipment assigned to contractors who perform on government contracts.
G	GSA	GSA owned equipment leased for Navy use.
H	HELD	Navy owned equipment held for rehabilitation or reassignment.
M	MUSE	Mobile Utilities Support Equipment.
O	OPERATIONAL	Navy owned equipment in regular use (other than Status Code T).
T	TACTICAL UNITS	Navy owned equipment assigned to the following operating forces not listed in the Naval Shore Activities Catalog, OPNAV P09B23-105, Part 2: Active Ships; Naval Mobile Construction Battalions (NMCB); Naval Cargo Handling and Port Groups (NAVCHAPGRU); Amphibious Construction Battalions (PHIBCB); Construction Battalion Units (CBU); Naval Construction Force (NCF); Naval Construction Training Centers (NAVCONSTRACEN); and Special Operating Units (SOU).

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## APPENDIX J. PAINING AND MARKING OF CESE

1. **CHEMICAL AGENT RESISTANT COATING (CARC) (for NCFs/SOUs)**. The CARC System is a combination of pretreatments, primers, and topcoats. After surface preparation and pretreatment, exteriors of vehicles are painted with an epoxy primer, then with an aliphatic polyurethane topcoat. CARC is a toxic substance. Safety precautions must be observed while painting with CARC.

a. **Safety.**

- (1) No person is to apply more than one quart of CARC a day.
- (2) Only one person is permitted to paint a piece of equipment at a time.
- (3) Clothing to provide full skin coverage is mandatory.
- (4) Rubber gloves must be worn to protect hands.
- (5) A respirator is mandatory when painting with CARC.
- (6) A face shield is mandatory.
- (7) It is strictly prohibited to paint equipment components which reach temperatures of 400°F or more (exhaust systems, turbochargers). It is also recommended that heat transfer components (radiators, transmissions, engines) not be painted, because CARC is an insulating material.
- (8) It is prohibited to weld or use a cutting torch on CARC painted surfaces, because it will produce airborne toxic materials. CARC must be completely removed by either sandblasting or stripping with solvent followed by high-pressure washing. Protective clothing and a respirator must be worn during CARC removal.
- (9) All residue from sanding and leftover CARC from painting is a **HAZARDOUS MATERIAL** and must be handled with care and disposed of in accordance with regulations and instructions. Prior to use, review all material safety data sheets (MSDS) for each paint and solvent.

b. **Paint National Stock Numbers.** The NSNs for commonly used quantities of CARC primers and topcoats are shown in Table J-1. If you need the NSN for other colors, check appendix B of TM 43-0139.

**TABLE J-1. Paint National Stock Numbers**

**(1) Primer (wash) pretreatment**

<u>DoD-P-15328</u>	<u>Size</u>	<u>NSN 8030-00-</u>
	1-1/4 QT	850-7076
	1-1/4 GL	281-2726
	5 GL	165-8577

**(2) Primers**

Epoxy-Polyamide, MIL-P-23377

(Contains chromates for use on nonferrous surfaces)

<u>Color</u>	<u>Size</u>	<u>NSN 8010-</u>
Deep yellow	1 PT	00-229-4813
Deep yellow	1 QT	00-142-9279
Deep yellow	2 QT	00-935-7080
Dark green	2 GL	00-082-2450
Deep yellow	2 GL	01-048-6539
Deep yellow	10 GL	00-082-2477

Epoxy, Coating, MIL-P-53022

(Corrosion inhibiting. Lead and chromate free. For ferrous and nonferrous surfaces)

<u>Color</u>	<u>Size</u>	<u>NSN 8010-01-</u>
White	1/4 QT	193-0516
White	1-1/4 GL	193-0517
White	5 GL	187-9820

Epoxy, Water reducible, MIL-P-53030

(Lead and chromate free. For ferrous and nonferrous surfaces)

<u>Color</u>	<u>Size</u>	<u>NSN 8010-01-</u>
Reddish-brown	1-1/4 QT	193-0519
Reddish-brown	1-1/4 GL	193-0520
Reddish-brown	1 GL	193-0521

Epoxy, VOC compliant, MIL-P-85582

(Lead free, contains chromates, water reducible)

<u>Color</u>	<u>Size</u>	<u>NSN 8010-01-</u>
Light green	1 QT	218-0856
Light green	1 GL	218-7354

**TABLE J-1. Paint National Stock Numbers (Continued)**

**(3) CARC**

CARC Single Component Top coat, MIL-C-53039 (Lead and chromate free; low VOC)

<u>Color</u>	<u>Size</u>	<u>NSN 8010-01-</u>
Green 383	1 QT	229-7546
Green 383	1 GL	229-9561
Green 383	5 GL	229-7547
Brown 383	1 QT	229-7543
Brown 383	1 GL	229-7544
Brown 383	5 GL	229-7545
Black	1 QT	229-7540
Black	1 GL	229-7541
Black	5 GL	229-7542
Sand	1 QT	234-2934
Sand	1 GL	234-2935
Sand	5 GL	234-2936
Tan 686	1 QT	276-3638
Tan 686	1 GL	276-3639
Tan 686	5 GL	276-3640
Aircraft Green	1 QT	246-0717
Aircraft Green	1 GL	246-0718
Aircraft Green	5 GL	246-0719

CARC Two-Component Top coat, MIL-C-46168, Type II  
(Lead and chromate free)

<u>Color</u>	<u>Size</u>	<u>NSN 8010-01-</u>
Green 383	1-1/4 QT	160-6741
Green 383	1-1/4 GL	162-5578
Green 383	5 GL	160-6742
Brown 383	1-1/4 QT	160-6744
Brown 383	1-1/4 GL	160-6745
Brown 383	5 GL	160-6746
Black	1-1/4 QT	141-2419
Black	1-1/4 GL	131-6254
Black	5 GL	131-6261

**TABLE J-1. Paint National Stock Numbers (Continued)**CARC Two-Component Top coat, MIL-C-46168, Type II (continued)

(Lead and chromate free)

<u>Color</u>	<u>Size</u>	<u>NSN 8010-01-</u>
Sand	1-1/4 QT	141-2416
Sand	1-1/4 GL	130-3347
Sand	5 GL	131-6259
Tan 686	1-1/4 QT	260-0910
Tan 686	1-1/4 GL	260-0909
Tan 686	5 GL	260-0908
Aircraft Green	1-1/4 QT	141-2420
Aircraft Green	1-1/4 GL	131-6255
Aircraft Green	5 GL	131-6262
Interior Aircraft Gray	1-1/4 QT	170-7583
Interior Aircraft Gray	1-1/4 GL	146-2649
Interior Aircraft Gray	5 GL	170-0132
(Used on Special Electronic Mission Aircraft)		

CARC Two-Component Top coat, MIL-C-46168, Type IV

(Lead and chromate free; high solids, low VOC)

<u>Color</u>	<u>Size</u>	<u>NSN 8010-01-</u>
Green 383	1-1/4 QT	260-7481
Green 383	1-1/4 GL	260-0911
Green 383	5 GL	260-0912
Brown 383	1-1/4 QT	260-7482
Brown 383	1-1/4 GL	260-0916
Brown 383	5 GL	260-0917
Black	1-1/4 QT	260-0913
Black	1-1/4 GL	260-0914
Black	5 GL	260-0915
Sand	1-1/4 QT	260-0921
Sand	1-1/4 GL	260-0922
Sand	5 GL	260-7483

**TABLE J-1. Paint National Stock Numbers (Continued)**

**(4) Thinner, MIL-T-81772**

<u>Type (Used with.....)</u>	<u>Size</u>	<u>NSN 8010-</u>
Type I (Polyurethane)	1 GL	00-181-8080
Type I (Polyurethane)	5 GL	00-181-8079
Type I (Polyurethane)	55 GL	00-280-1751
Type II (Epoxy)	1 GL	01-200-2637
Type II (Epoxy)	5 GL	01-212-1704
Type II (Epoxy)	55 GL	01-168-0684

c. Painting Instructions

(1) CARC Test. Equipment painted with CARC should have "CARC" stenciled near the data plate. If not stenciled, wet a cloth with acetone and rub hard on the painted surface for 10 seconds. Wet a clean corner of the cloth with acetone and rub the same spot another 10 seconds. If no paint comes off the second time, it is CARC (the first rub may remove over spray and make you think it is not CARC).

(2) Spot Painting or Repainting. CARC painted equipment must be spot painted or repainted with CARC only. CARC may be used on equipment painted by the alkyd method, but alkyd paint must not be used on CARC painted equipment. When painting unit identification markings, bumper markings and vehicle tie down, use only CARC. Using alkyd paint for this gives you areas where chemical agents will be retained.

(3) Areas to Avoid CARC. Do not use CARC on fabric, metals that have anodized or parkerized finishes (such as weapons), hoses or flexible surfaces. CARC won't last on wood because wood expands and contracts with weather changes, and CARC is not flexible enough to move with wood, so it will crack and peel off.

(4) Step-by-Step Touchup. There are a number of steps to follow when you apply CARC. If you skip a step or take a shortcut, you'll end up with a coating that peels easily or one that bubbles up and falls off.

(a) Surface Preparation. Surface preparation is important. If you skip or skimp on it, the paint won't stick to the surface. You can apply CARC over old CARC or alkyd paint as long as the old surface is clean and tightly bonded to the surface. Clean off all rust, corrosion, oil, grease, moisture, dirt, and loose or blistered paint. CARC will blister if applied over lacquer, even if it's covered by alkyd paint.



(b) Painting. Prepare ferrous metal (steel and iron) or aluminum surfaces as listed below.

1 Wash with liquid detergent, NSN 7930-00-282-9699, and water; Rinse with fresh water and let dry.

2 Remove all loose paint and rust by sanding or by using an orbital grinder. When you sand old paint, use a respirator designed to filter out dust, because the old paint may contain lead or chromates. Use a HEPA vacuum, such as NSN 7910-01-068-5662, to clean up.

3 Feather the edges of good paint by sanding, or with steel wool.

4 As soon as possible (but no longer than four hours later) clean the area to be painted with thinner, NSN 8010-00-181-8079.

5 If the old paint is sound, and you didn't have to sand to bare metal, you don't need the pretreatment and primer, and you can skip to Step 7. Otherwise, immediately coat all bare metal surfaces with coating compound NSN 8030-00-850-7076. This protects the surface and helps the primer bond to the surface. Keep the compound off the surrounding paint because it can keep the primer from bonding to old paint.

6 After the coating is dry (at least 30 minutes but no more than 24 hours) paint it with primer NSN 8010-01-193-0516. Stir each component separately until uniform. Mix the two parts well, then let stand 30 minutes before you use the primer. Don't mix more than you can use that day, because you can't save any mixed primer. It will harden in the pot within 15 hours, and there is no way to prevent hardening.

7 After application, the primer will dry hard in 30 to 90 minutes, and you can add the CARC topcoat. Use either the two-component or single part CARC. Stir thoroughly before use.

8 The topcoat dries to the touch in 30 minutes and is thoroughly dry in 4 to 6 hours. It will be cured enough to withstand impact (walking on it) in 6 to 8 hours. Complete curing takes 7 to 14 days.

d. Unused Paint. Treat as hazardous waste any leftover paint and topcoat component B, if it goes bad in the can. Good component B should be clear to pale yellow. If it's thickened or crystalline in consistency, seal it and get rid of it. You can find disposal information in the Material Safety Data Sheets (MSDS), or at the local Environmental Office.

## 2. CAMOUFLAGE PAINTING OF CESE EQUIPMENT

### a. General

(1) Authorization for Camouflage. As noted in Chapter 2, paragraph 2.14.1.e, authorization for camouflage painting of CESE may only be granted by a cognizant Theater Commander or higher authority.

(2) Camouflage Patterns. All CESE equipment required to be painted camouflage will use the new 3-Color Camouflage Patterns (3-CCP). Use only printed design patterns in the technical manual, *U. S. Marine Corps Camouflage Paint Patterns*, TM 4750-15/2-2. The 3-CCP system analyzes the equipment to note geometric shapes, such as corners and side view mirrors, and spreads patches of paint over them, thus blending them. Camouflage colors are applied in patches and patterns that are determined by computer programs. Pattern replacement and the ratio of black to green and brown must be precise to afford maximum concealment.

(3) 3-CCP System. The 3-CCP is a system of contrasting color bands and patches applied over the base color (Green 383) to disrupt the silhouette or outline of the vehicle or equipment item. These bands of color which break up the outline are keyed to vehicle surface features such as door handle, door lock, or fender that are identifying features of that class or type of equipment.

(4) Other than 3-CCP. Those equipment items that do not have a 3-CCP are to remain the base color (Green 383) unless otherwise directed by higher authority.

### b. Application Instructions

(1) Pattern Marking. Marking the pattern on the equipment is critical and must be within 1-inch tolerance of the appropriate drawing in the TM 4750-15/2-2 (Figure J-1). Outline the pattern with chalk and use the reference points on equipment to help keep the correct shape for each color area. Do not use straight, vertical, or horizontal lines. All unit identification, USN registration, and safety markings are to be removed and later reapplied to the equipment using lusterless camouflage CARC (Figure J-2). After the chalked pattern has been inspected for accuracy, chalk should be replaced with CARC paint applied by a small artist's brush, since CARC will not adhere to chalk. Mark the pattern with numbers or letters which tell the painter what color to use in a "paint by number" method.

(2) Color Areas. Fill in the color areas with the required color paint using the instructions for CARC painting covered in this appendix.

### c. Colors for Different Geographic Locations and Climates

(1) Desert. For desert environments one color, Sand 33303, is to be used over the entire piece of equipment.

(2) Winter or Arctic. For winter or arctic conditions white paint shall be used as follows:

-15% or less snow cover:	no change
-15% to 80% snow cover:	paint green portion of 3-CCP
-80% or above snow cover:	paint all white

white

**NOTE:** *Type of white paint and coverages will be determined by the cognizant Theater Commander.*

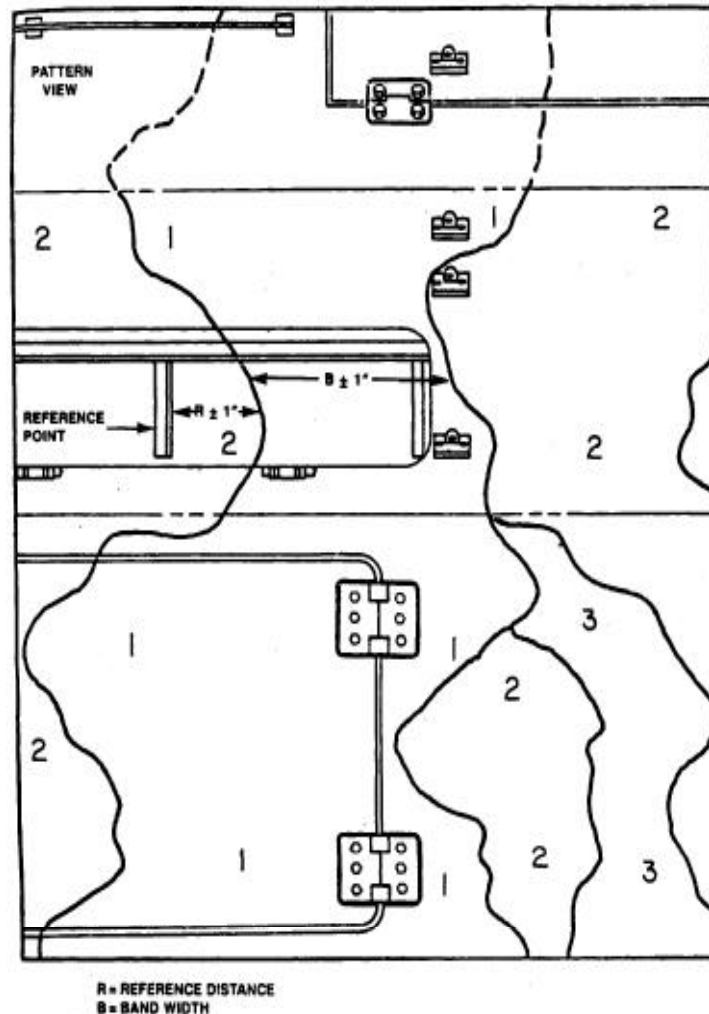
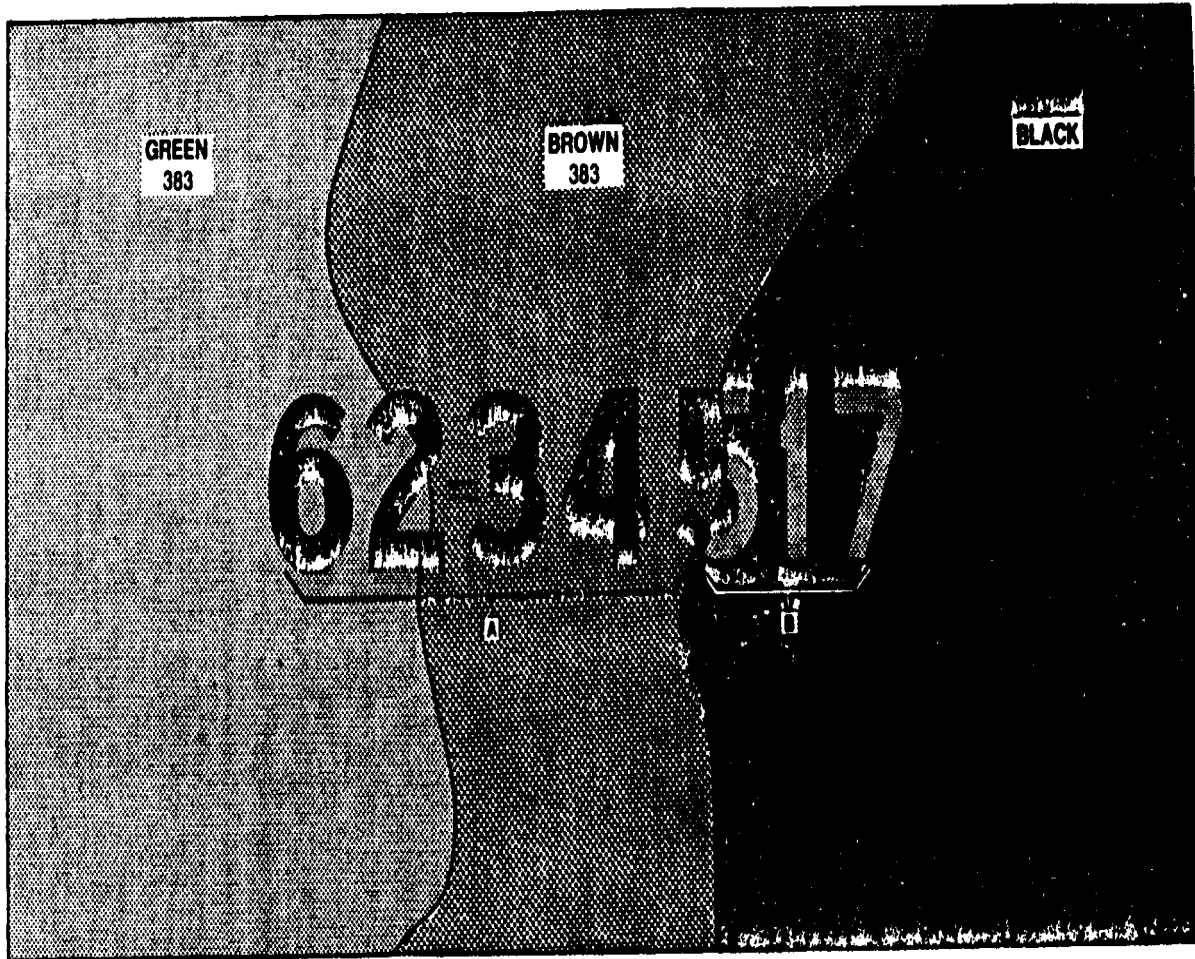


FIGURE J-1. Definition of Tolerance of 3-Color Camouflage Patterns



**A. STENCIL REGISTRATION NUMBERS IN BLACK  
ON GREEN OR BROWN SURFACES**

**B. STENCIL REGISTRATION NUMBERS IN GREEN 383  
ON BLACK SURFACES.**

**NOTE: WHEN STENCILING REGISTRATION NUMBERS ON  
A WHITE SURFACE USE BROWN 383.**

**FIGURE J-2. Application of Registration Numbers over 3-Color Camouflage  
Patterns**

### **Vehicle and Equipment Colors and Markings**

<b>Vehicle Equipment Type</b>	<b>Equipment Code</b>	<b>Equipment Color</b>	<b>Special Markings/colors</b>
Sedans/ Station wagons	0104/0210	Manufacturer's standard color	None
Busses	0061-0070	Manufacturer's standard color	None
Bus, School	0063	Yellow 3415	None
Ambulances	0333/0334	White 17886	Orange/blue
Ambulance	0331/0332	White 17886	Black 17038
Trucks, General Purpose	All codes	Manufacturer's standard color	None
Trailers, steel	All codes	Manufacturer's standard color	None
Trailers, aluminum	All codes	Not applicable	None
Construction and allied equipment	2110-5910 less 5820-5842	Yellow 13538	As applicable
Refuse collection	5820-5842	Manufacturer's standard color	None
Railway cars	6100-6160-6400	Aluminum (2lbs. Aluminum pigment sped. TT-P-32. Type II class B, varnish Mil-V-1174	As applicable
Railway caboose	6340	Red 11105	Black 17038
Railway locomotives	6530-6580	Yellow 13538	None
Miscellaneous railway	6210, 6220, 6230, 6240, 6370, 6250, 6600	Yellow 13538	None
Weight handling equipment	8160-8430	Manufacturer's standard color	None
Aviation & Grounds Fuel	0744-0756, 0890	Yellow 13538	As required

Figure J-3.

### 3. Corrosion Control

a. Corrosion Conditions. Civil Engineer Support Equipment (CESE) is assigned to many locations where atmospheric and environmental conditions can cause severe corrosion and a reduction in equipment life. Corrosion can be slowed by proper cleaning and the correct application and maintenance of protective coatings such as paint, undercoating, and preservatives. Body corrosion occurs primarily where poor ventilation caused by clogged drain holes or accumulations of mud and sand allow moisture to remain on unprotected metal surfaces.

(1) Rustproofing. All automotive CESE shall be core treated. Only material that meets U.S. Government Specification MIL-C-0083933A (MR), *Corrosion Preventive, Rustproofing, Undercarriage* shall be used. Appendix M lists all commercial products that meet this specification. Proper application and preparation of the areas to be coated or recoated is necessary. Surfaces shall be reasonably clean, dry, and free from excessive rust, oil, grease, dust, road tar, and other foreign matter. Core treatment of a vehicle shall be inspected during each preventive maintenance (PM) service; one scratch through the preservative can cause corrosion to start beneath the rustproofing.

(2) Other Preservatives. Appendix M identifies and describes the different preservative compounds applicable on CESE. Additional information can be obtained from NAVFAC P-434, *Construction Equipment Department Management and Operations Manual*.

b. Equipment Cycling. Equipment not used regularly must be cycled and exercised to protect it from deterioration. Cycling is "*an operation or series of operations that recur regularly and, when completed, constitute one complete performance,*" which means that all parts of an item of equipment have been operated at their rated capacity for their intended use. Vehicles shall be road-tested under a load through their full gear range; generators shall be operated under rated load. Starting and running an engine cycles the engine but not the vehicle.

c. Live Storage. Equipment subject to long periods of nonutilization (a period of two PM cycles) absorbs maintenance man-hours, invites improper use, and often suffers excess deterioration. Such equipment, other than cranes, may be placed in live storage in accordance with the provisions set forth in Appendix N.

**NOTE:** *All cranes must be maintained in an active status and cycled weekly.*

d. Deadline Preservation. All deadline vehicles and equipment awaiting repairs must be inspected, cycled, and preserved to prevent deterioration. Deadline equipment shall be parked in a separate location that is easily accessible and adequately drained. This location shall be out of the main traffic flow, but still highly visible. Constant surveillance of the deadline reduces cannibalization. Deadline equipment must not be removed from the PM schedule; in fact, it should be inspected more often. Each time an item is inspected, it should be cycled as much as

mechanically possible; for example, if a dump truck is down for wheel seals, cycle the engine and the hydraulic dump. Each inspection shall also ensure that all disassembled components are tagged, covered, and stored, all machine surfaces are preserved, all openings are covered and weathertight, no unrecorded cannibalization has taken place since the last inspection, and all required parts are on order. A Preventive Maintenance ERO/SRO shall be used for this inspection.

e. Beach Operations. Every effort must be made to minimize equipment operation near salt water. Equipment should be left behind the dune line, protected from high water and salt spray. The following procedures will minimize damage caused by operating equipment in and around salt water.

(1) Pre-inspection. Prior to beach operations, equipment shall be thoroughly inspected and prepared. Ensure that all equipment is in good operating condition, so that the possibility of failure in the water is reduced. Inspect to ensure that the fan disconnect works and all fording equipment is connected and watertight. Use of water resistant greases, antiseize, and antirust compounds will reduce corrosion.

(2) Operating Precautions. To reduce the possibility of radiator damage, equipment shall enter the water as slowly as possible. Ensure that the equipment does not become submerged below its high water mark, especially when swell and surf action are present. Caution must also be taken when operating in low tides, because of the incoming tide. Dozers are not to be used to anchor causeways for extended periods.

(3) Servicing After Operations. Immediately after operating CESE in or around salt water, thoroughly clean and wash with fresh water. Ensure that all areas are washed and all accumulations of wet sand removed. A thorough "B" preventive maintenance inspection should be performed, with special attention given to possible contamination of gearbox and fluid reservoirs. If salt water is detected, the reservoir and the system must be emptied, flushed, and refilled with the appropriate fluid.

f. Recovery Procedures. Immediately after recovering equipment that has been submerged, the following procedures must be taken:

(1) Thoroughly wash and clean the equipment with fresh water and ensure that all accumulations of sand and mud are removed.

(2) Wash and flush out engine with an oil and diesel fuel mixture. Remove the spark plugs or fuel injectors and turn the engine over.

(3) Wash and flush out all fluid reservoirs and compartments. Replace all filters.

(4) Run engine and operate all equipment parts for several hours to prevent freezing. If the engine will not start, disassemble, clean, and reassemble.

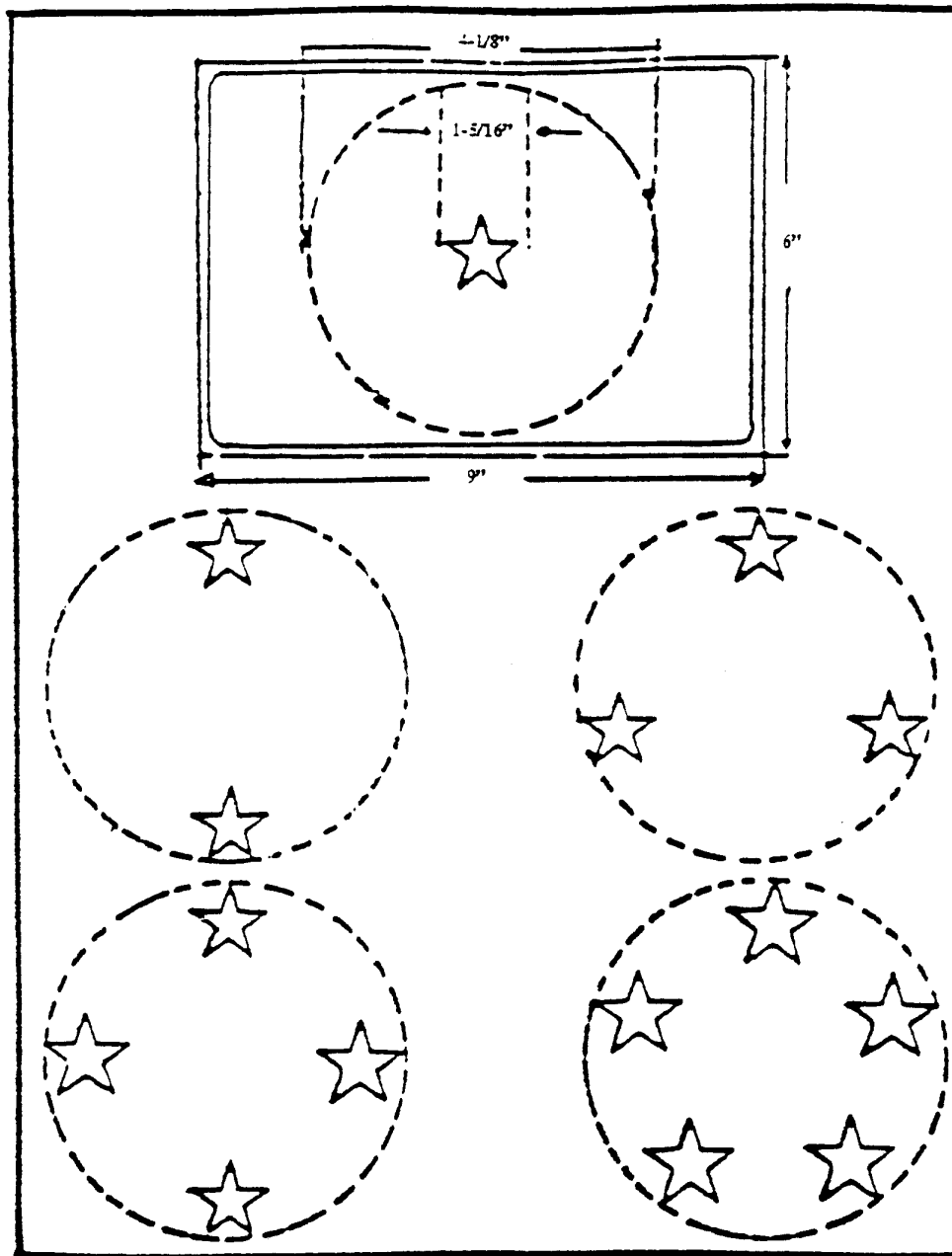
DoT Placard for Flammables



Figure J-4.



### Navy Flag Officer Designation Plate



1. Vehicle flag plates of flag officers eligible for command at sea will consist of white stars on a blue background.
2. Vehicle flag plates of flag rank specialists not eligible for command at sea will consist of blue stars on a white background.

Figure J-5.

## Locations of Markings

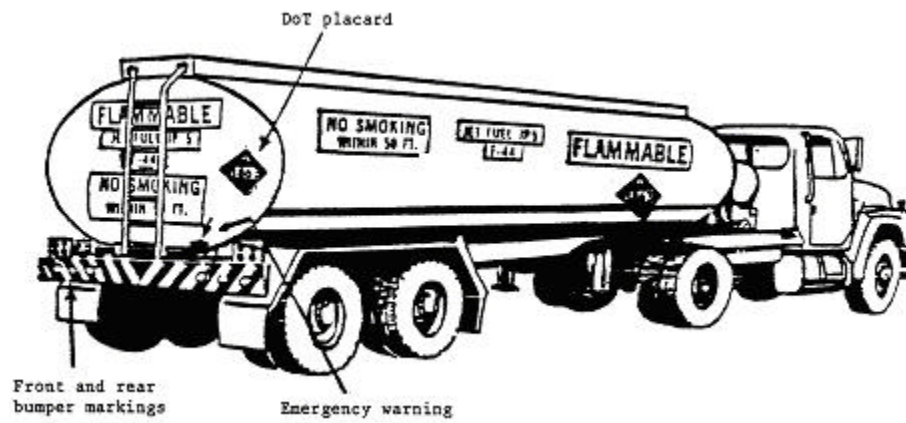


Figure J-6.

## Locations of Markings

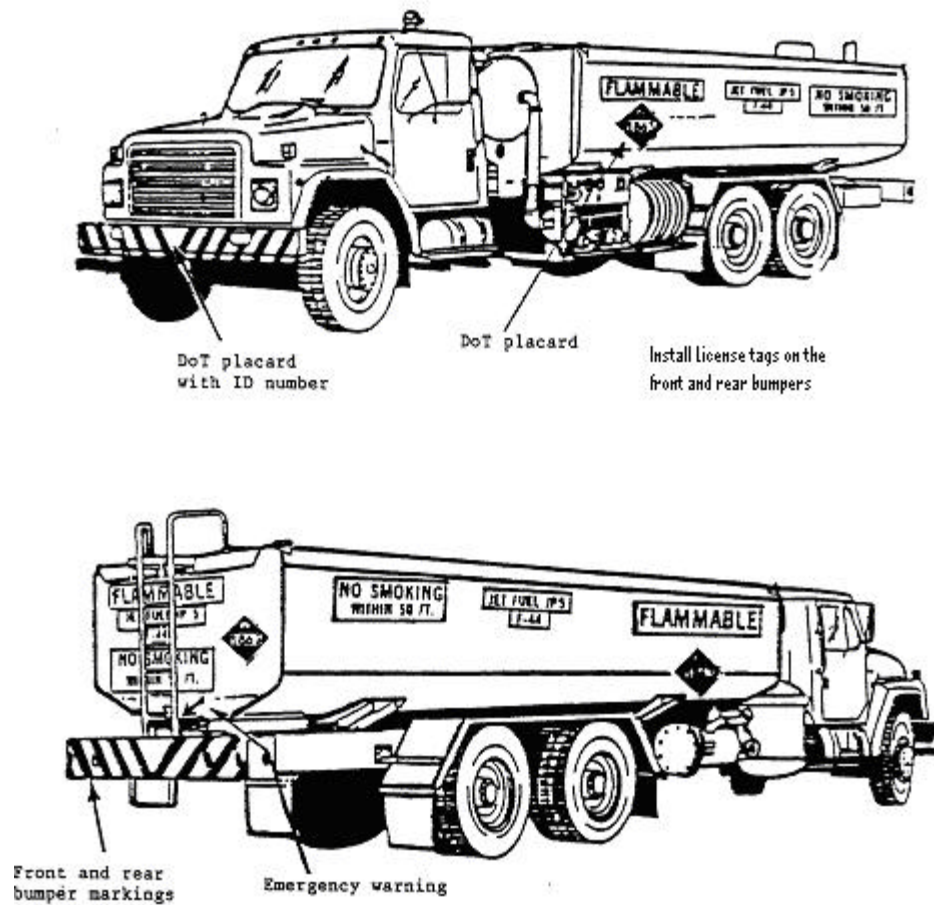


Figure J-6 (continued)

## Locations of Markings

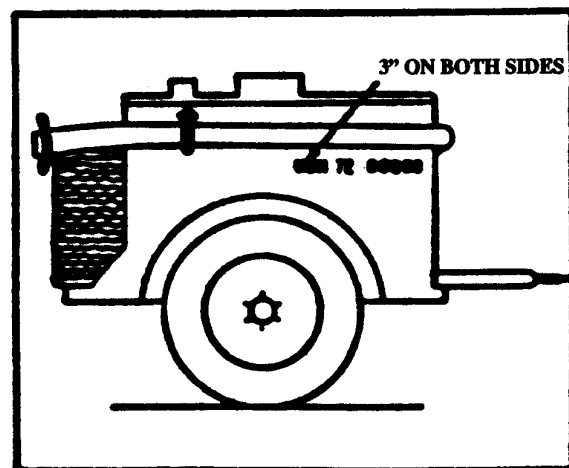
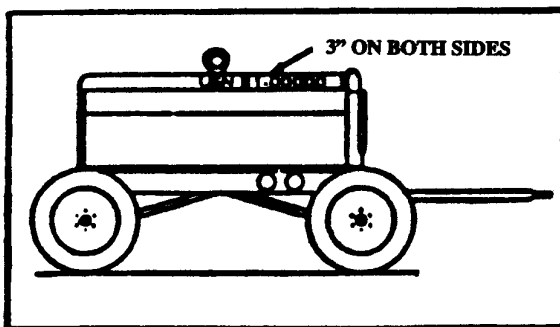
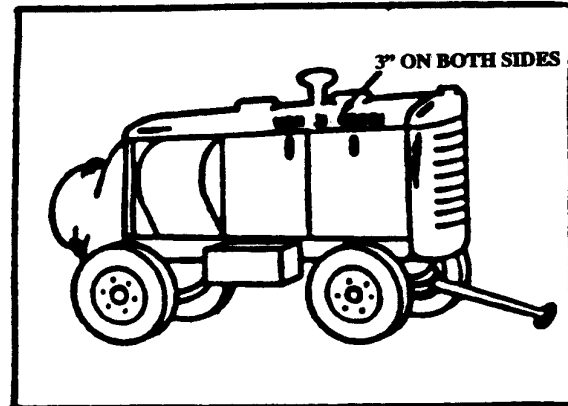
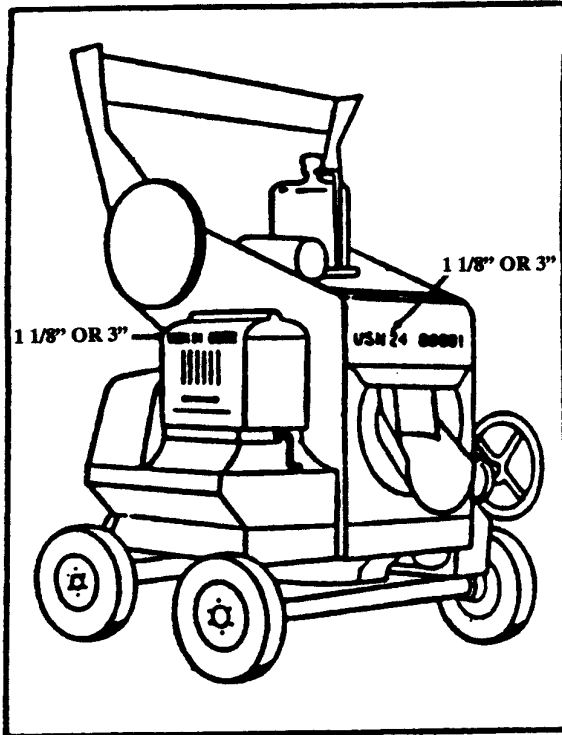


Figure J-6 (continued)

## Locations of Markings

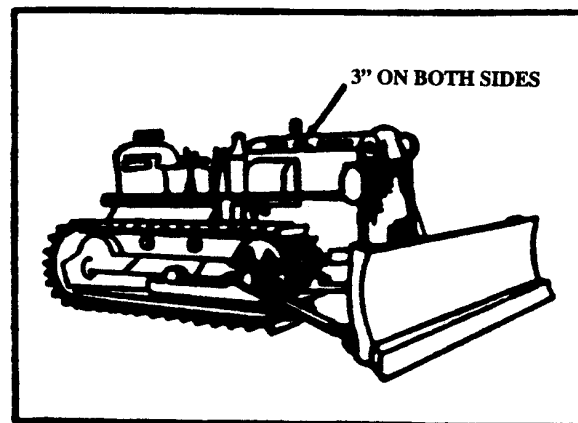
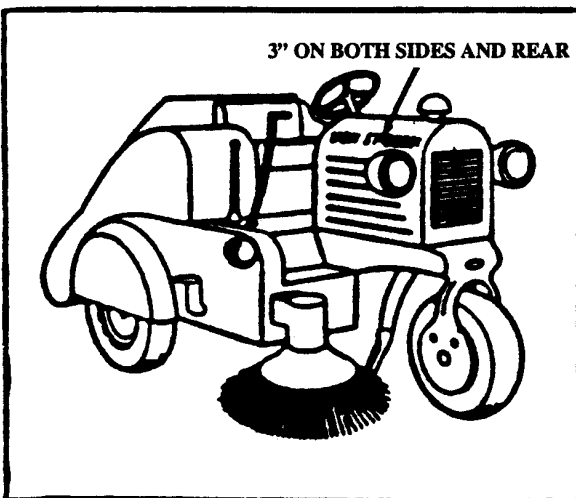
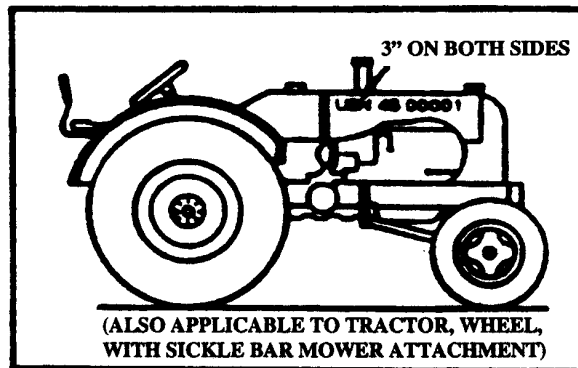
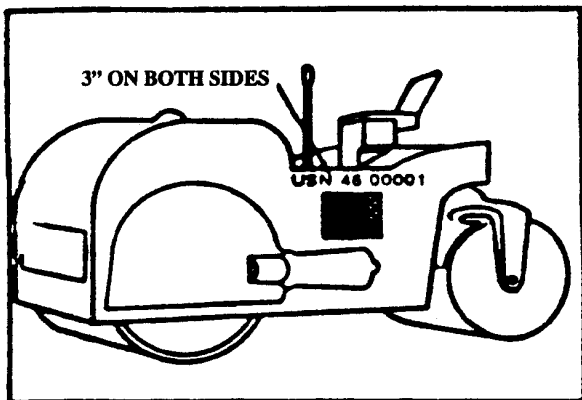
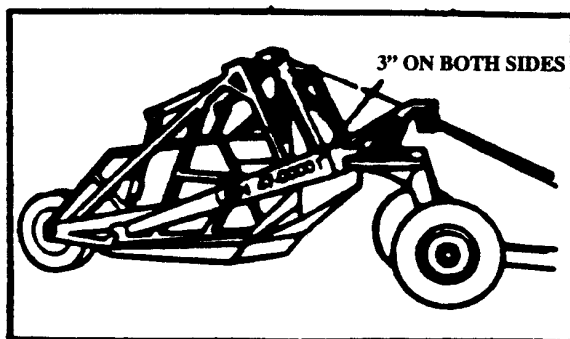
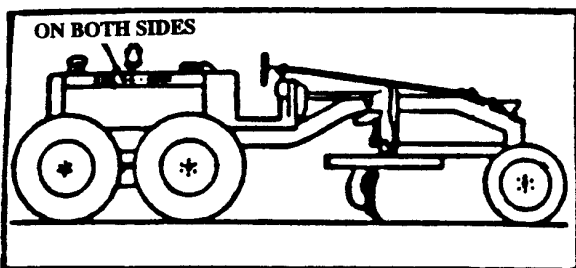


Figure J-6 (continued)

## Locations of Markings

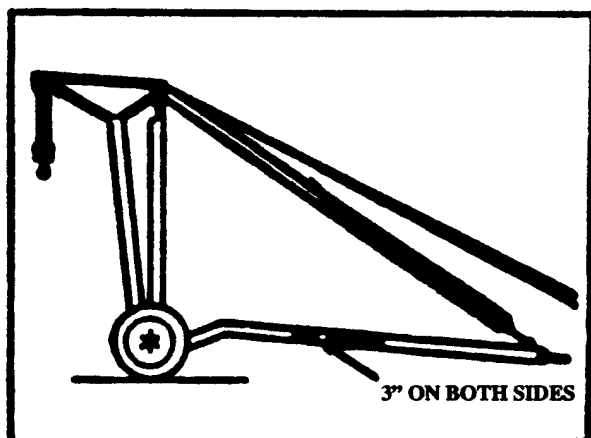
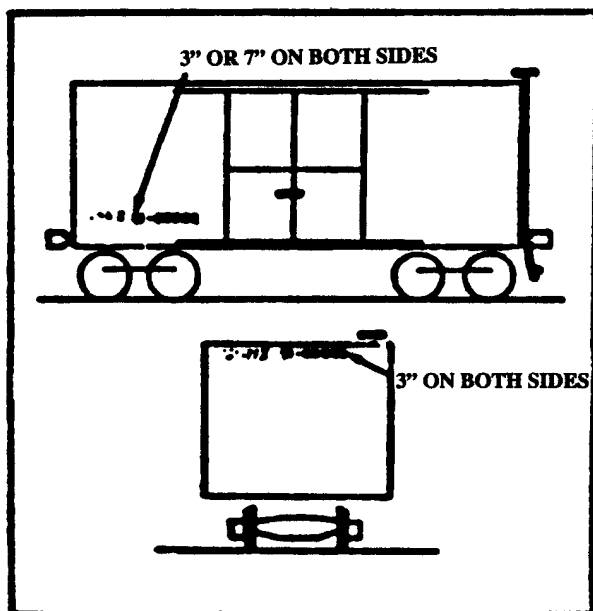
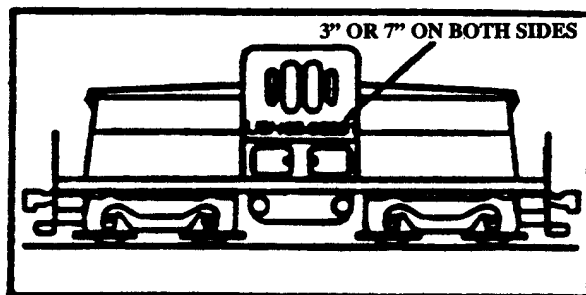
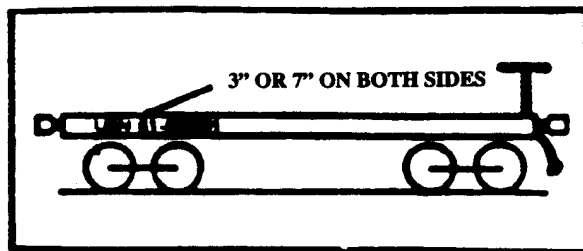
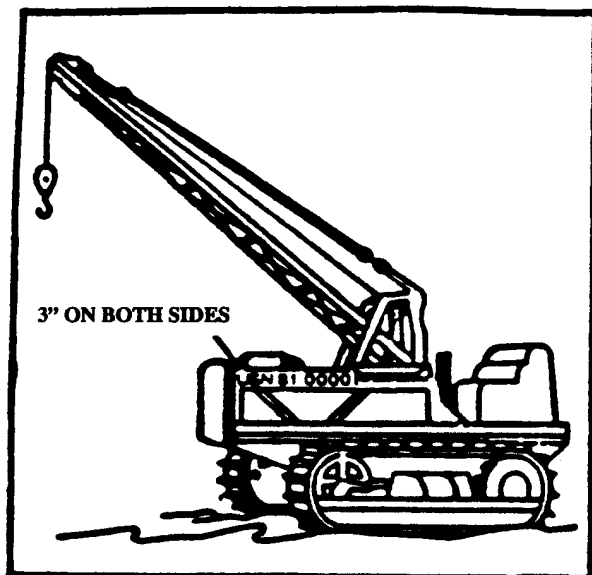


Figure J-6 (continued)

## Locations of Markings

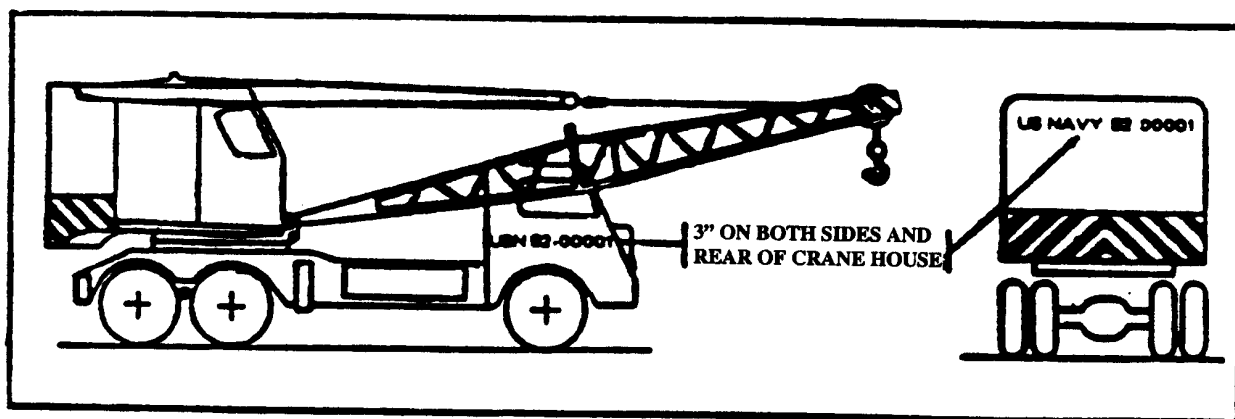
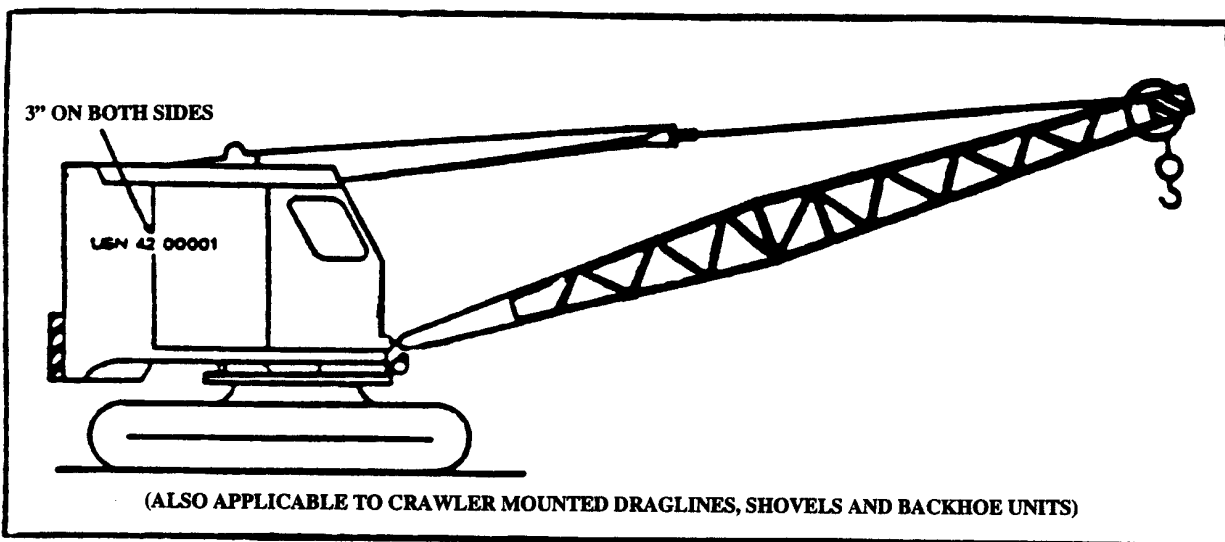


Figure J-6 (continued)

## Locations of Markings

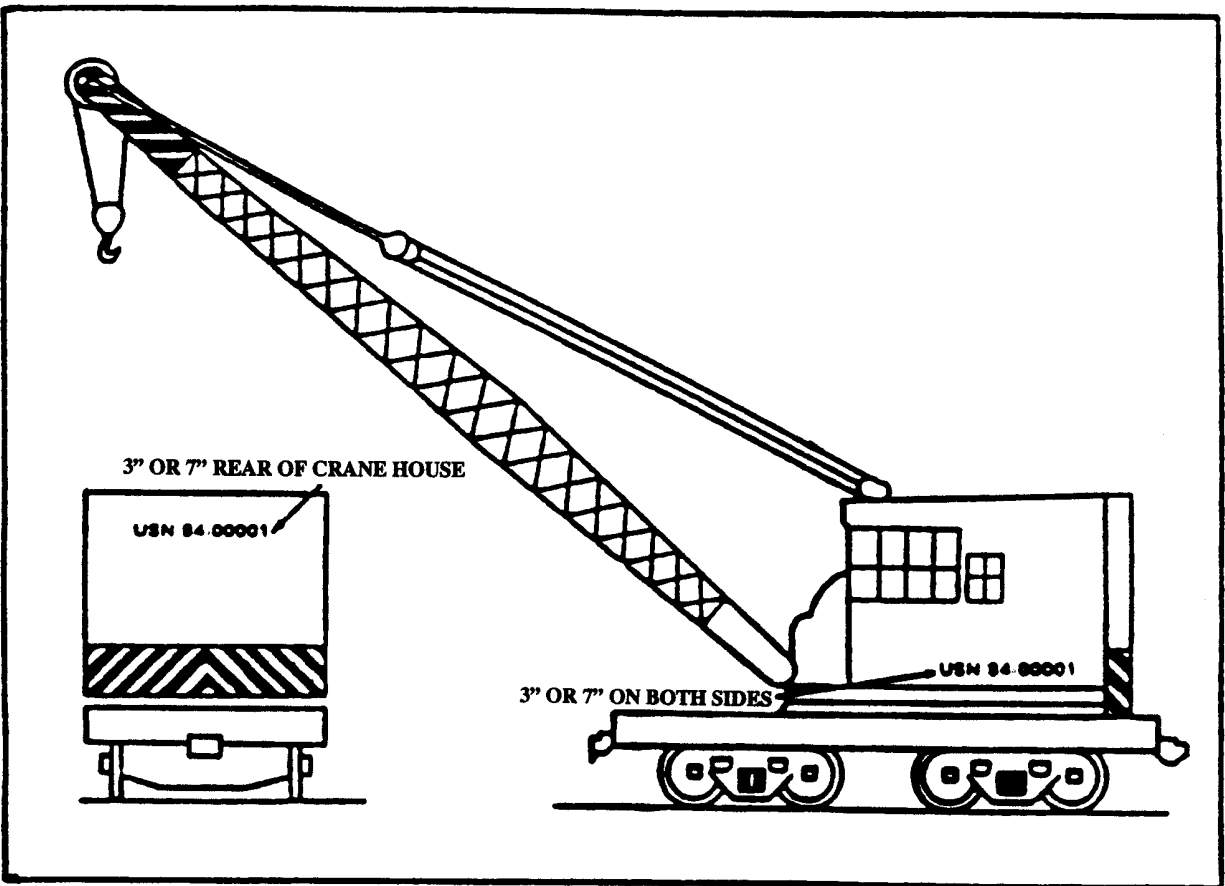


Figure J-6 (continued)



## Locations of Markings

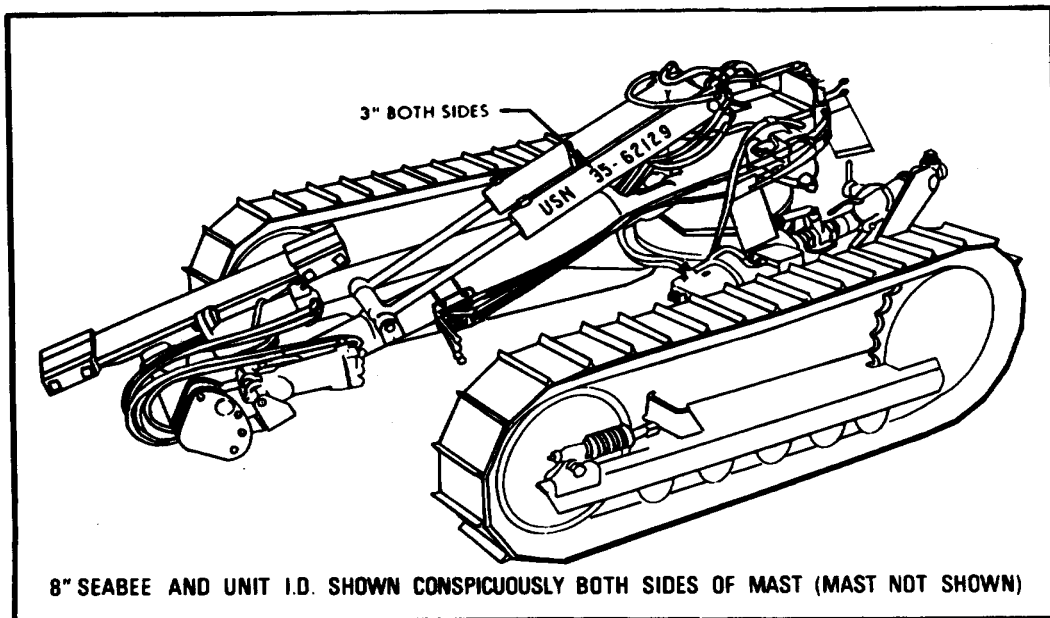
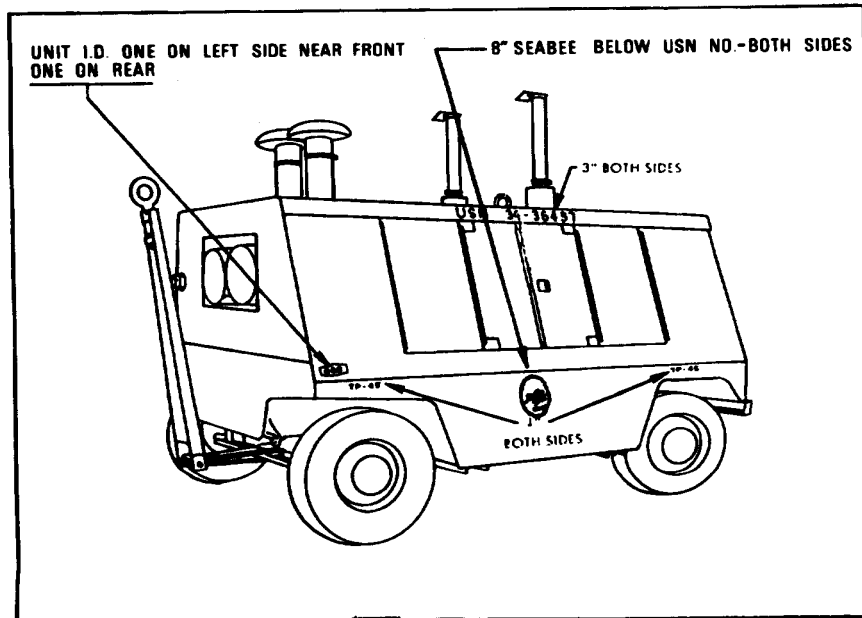


Figure J-6 (continued)

## Locations of Markings

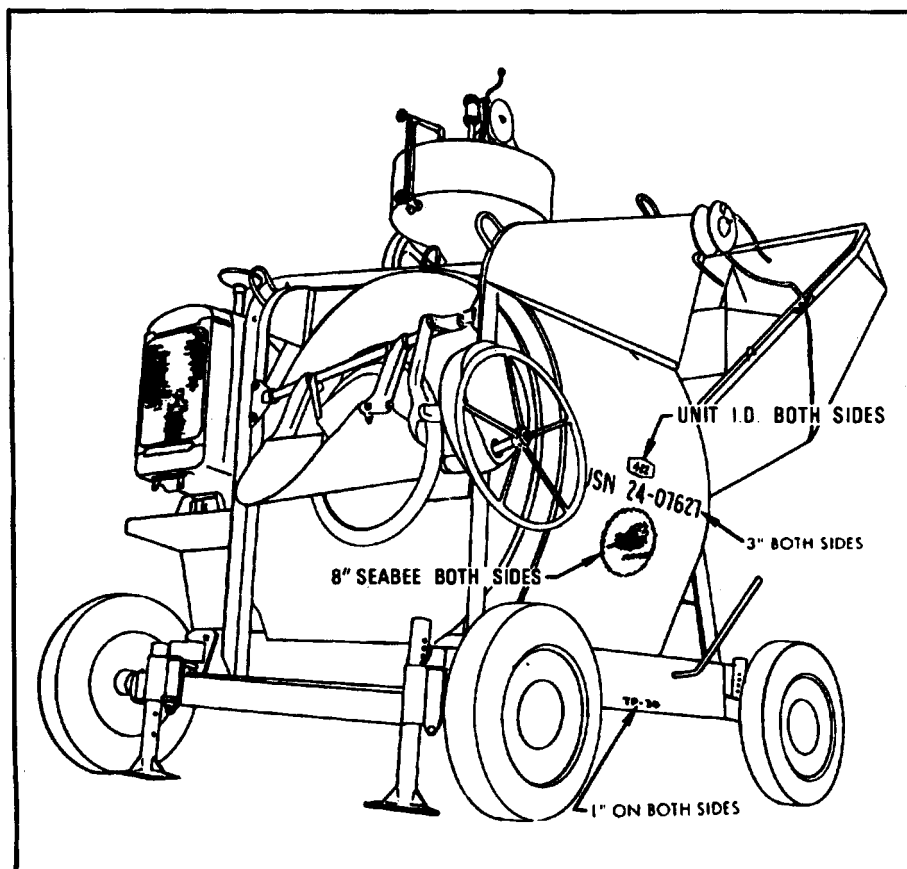
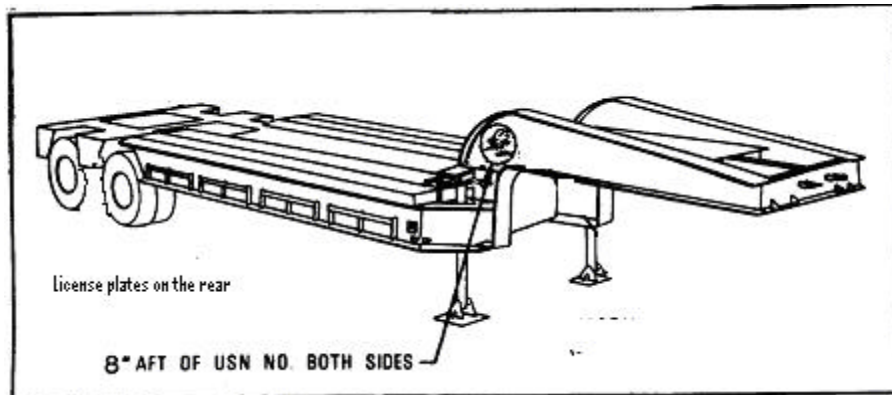


Figure J-6 (continued)

## Locations of Markings

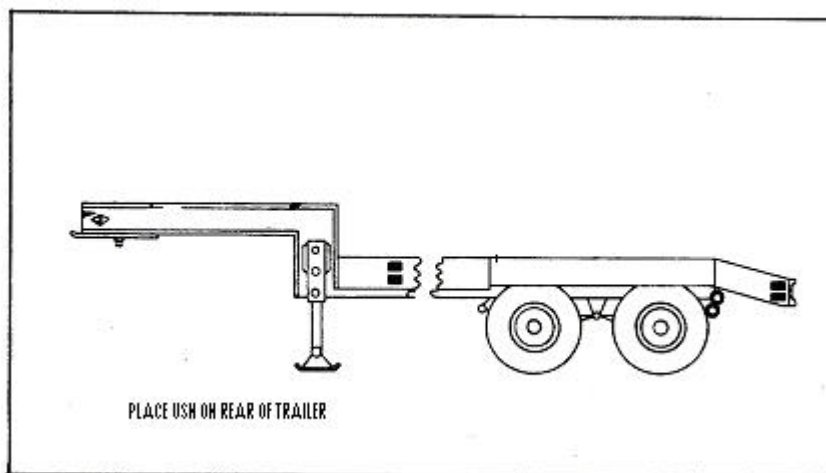
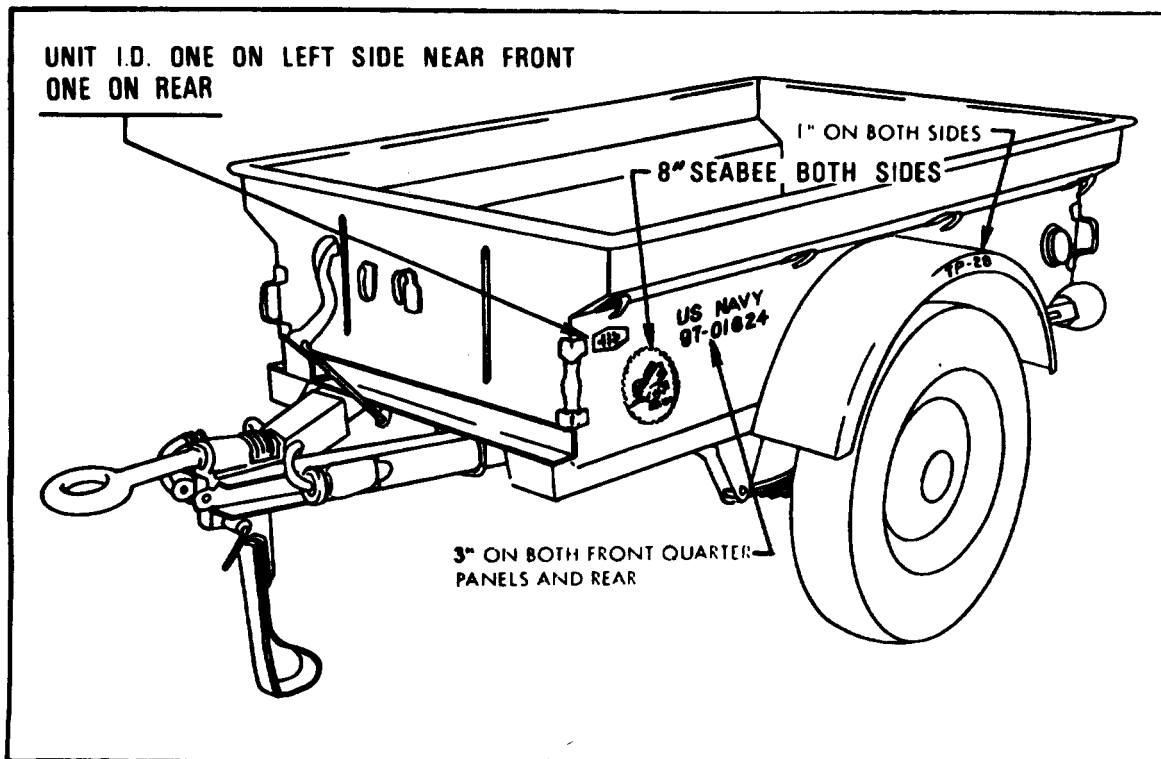
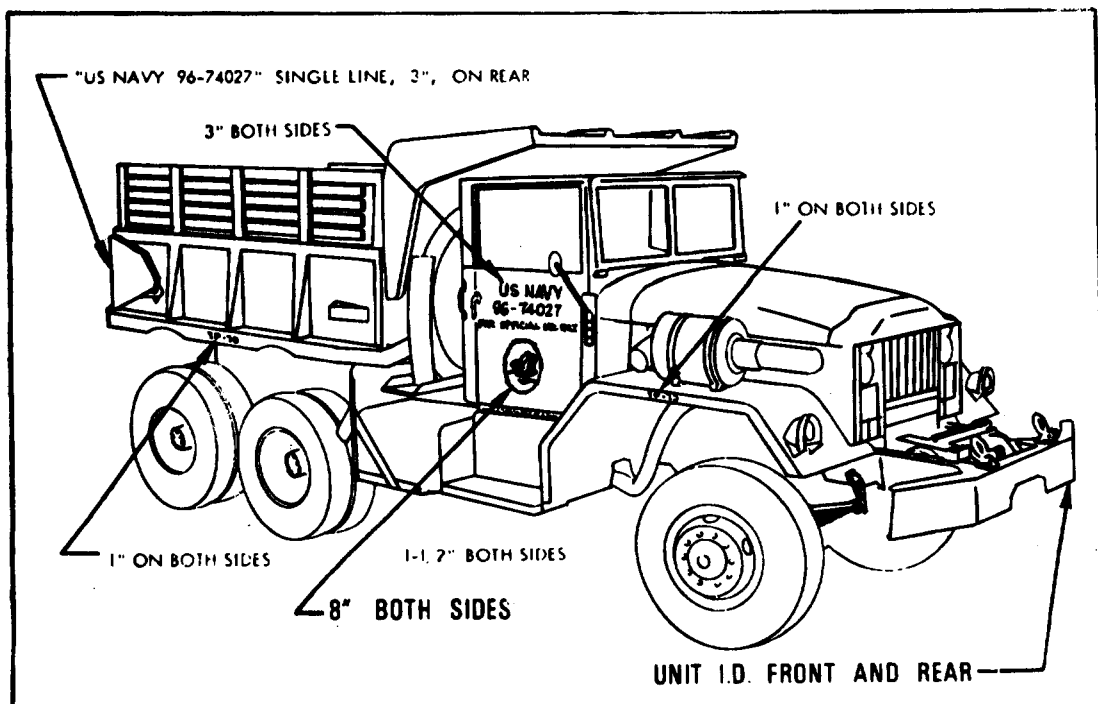
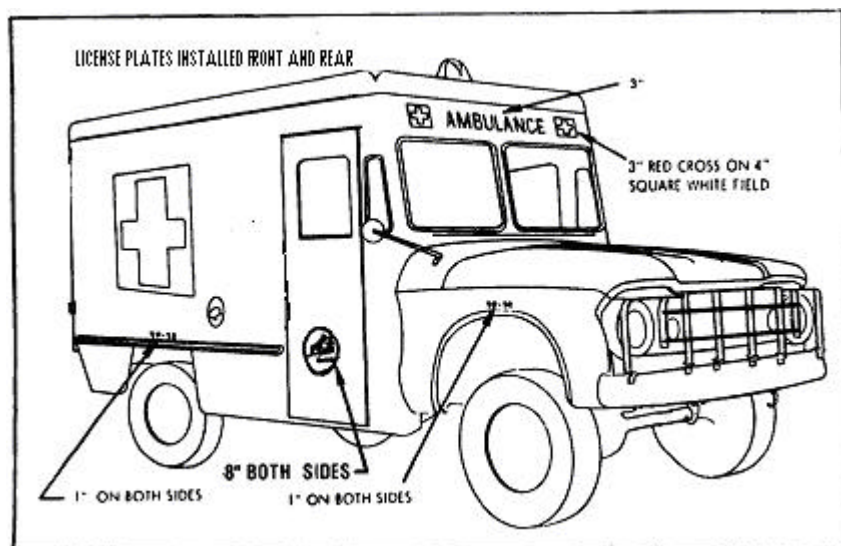


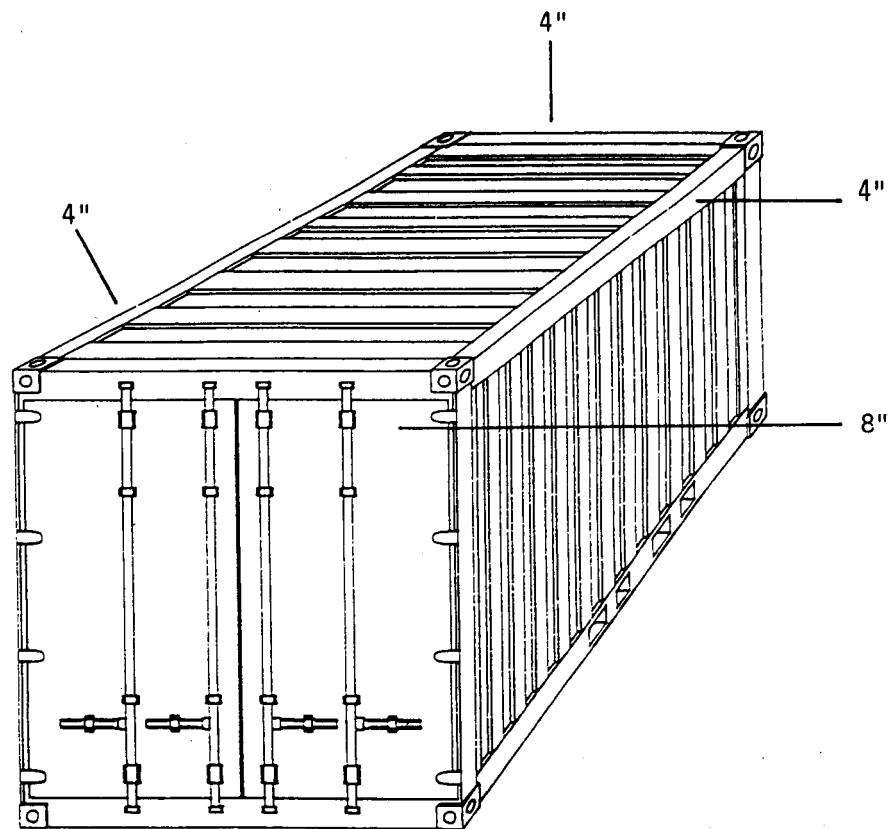
Figure J-6 (continued)

## Locations of Markings



Note: On "M" series type vehicles, use license plates where possible  
Figure J-6 (continued)

### Locations of Markings



8 inch Seabee on left door above USNG

4 inch Seabee on sides and end above USNG number

Figure J-6 (continued)

**APPENDIX K. NAVAL CONSTRUCTION FORCE (NCF)**  
**AUTOMOTIVE EQUIPMENT INSPECTION GUIDE**

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
1		X	X	<u>Valve Mechanism.</u> Adjust valves as the need for service is indicated by valve noises or engine performance.
2		X	X	<u>Ignition System.</u> Check condition of distributor cap and rotor. Check timing and distributor spark advance.
3		X	X	<u>Spark Plugs.</u> Clean and gap spark plugs. Replace as required.
4	X	X	X	<u>Fuel System.</u> Check fuel filter and fuel pump screens and bowls. Clean or replace as required. Adjust idle speed and fuel mixture as required.
5	X	X	X	<u>Choke and Throttle Controls.</u> Check the choke, throttle linkage, engine shutoff and emergency shutoff for proper operation. Lubricate as required.
6		X	X	<u>Governor.</u> Inspect all linkage and pins for wear and the operating efficiency of the governor under varying load conditions. Notice signs of surging or improper operation. Lubricate as required. Using tachometer, check engine governed speed.
7	X	X	X	<u>Fuel Tank and Shutoff Valves.</u> Inspect fuel tanks for condition of mounting brackets, plugged air vents, and fuel lines for leaks or chafing. Check shutoff valve for proper operation.
8	X	X	X	<u>Lights.</u> Inspect all lights, signals, and reflectors. Check condition of trailer jumper cables and junction boxes on truck-tractors. Visually check headlight alignment.
9	X	X	X	<u>Battery.</u> Check water level. Clean battery, terminal connections, remove battery and clean box, check hold-down bolts and brackets.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
10		X	X	<u>Starter.</u> Check that mounting bolts are tight and the cable connections are clean and tight.
11	X	X	X	<u>Instruments and Controls.</u> Check all instruments, gauges, switches, controls, and warning devices for proper operation.
12	X	X	X	<u>Cooling Systems.</u> Check and tighten radiator mounts and hose connections. Clean and straighten radiator fins, as necessary. Test antifreeze. Drain, flush, and refill cooling system at manufacturer's recommended service interval for mileage/hour usage.
13	X	X	X	<u>Fan Assembly and Fan Belts.</u> Inspect fan assembly. Inspect fan belts for cracks, frayed edges, and adjust tension to manufacturer's specifications.
14	X	X	X	<u>Exhaust System.</u> Check for exhaust gas leakage, and excessive noise. Check rain caps.
15	X	X	X	<u>Clutch.</u> Check for clutch slippage. Check that free travel is in accordance with manufacturer's specifications.
16	X	X	X	<u>Hydraulic Brakes.</u> Check pedal travel; fluid level; brake line condition; check for leaks; road test.
17	X	X	X	<u>Full Air or Air Over Hydraulic Brakes.</u> Drain air reservoirs. Check air pressure buildup. Check brake chamber push rod. Check quick application valve and for complete release of all brakes. Check tractor protection valve controls in normal and emergency positions. Check operation of emergency brake application for trailers. Check brake hose condition. Road test to determine if brakes function properly. Test low air pressure alarm.
18		X	X	<u>All Brakes.</u> Inspect for wear and damage. Check and lube wheel bearings as required by the manufacturer. Perform Item 16 or 17, as applicable.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
19	X	X	X	<u>Leaks.</u> Visually inspect the engine compartment, brake drums, and beneath the vehicle for indications of water, oil, fuel, or transmission fluid leaks.
20	X	X	X	<u>Lubricate.</u> Lubricate, using lube charts and manufacturer's specifications. Check fluid levels and fill, as required.
21		X	X	<u>Engine Oil and Oil Filter.</u> Oil change intervals shall be based on the vehicle manufacturer's recommended maintenance interval for mileage/hour usage.
22	X	X	X	<u>Air Cleaner.</u> Check screens and oil level, service as necessary. Replace or clean elements, as required.
23		X	X	<u>Trunion Axle Bearings.</u> Lubricate.
24	X	X	X	<u>PCV Valve.</u> Check positive crankcase ventilation system for proper operation. Clean or replace components, as required.
25	X	X	X	<u>Vacuum Brake Booster Air Cleaner.</u> Clean and lubricate.
26	X	X	X	<u>Turbochargers, Superchargers.</u> Check for leaks and proper operation.
27	X	X	X	<u>Gear Boxes.</u> Check mounting and assembly bolts, breathers, lube levels, and indications of leaking gaskets or seals. Drain and refill at manufacturer's recommended service interval for mileage/hour usage.
28		X	X	<u>Automatic Transmission.</u> Do Item 27, then check automatic transmission in accordance with the vehicle manufacturer's recommended procedures. Check and adjust shifting linkage.
29	X	X	X	<u>Universal and Slip Joints.</u> Inspect and lubricate U-joints and slip joints in accordance with manufacturer's recommendations. Tighten all driveline bolts.



<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
30	X	X	X	<u>Hydraulic System.</u> Check lines for leaks, packing glands for adjustment, controls for excessive wear. Check reservoir fluid level and vent openings. Hydraulic oil and filter change intervals will use the ON condition system. The system's oil is sampled and analyzed, but oil is not changed unless oil analysis indicates it needs to be changed, or the system's hours have reached manufacturer's recommended maintenance interval.
31	X	X	X	<u>Air Compressor, Valves and Lines.</u> Check oil level. Clean air filters and drain water traps. Check compressor unloader safety valve, belts and pulleys, and adjust in accordance with manufacturer's specifications. Check for leaks.
32	X	X	X	<u>Steering System.</u> Check the steering linkage for excessive looseness, proper alignment, and adjust the steering system in accordance with manufacturer's recommended procedures, if necessary.
33	X	X	X	<u>Differential.</u> Check lube levels. Check for unusual noises and indications of leaking gaskets or seals. Drain and refill at manufacturer's recommended service interval for mileage/hour usage.
34	X	X	X	<u>Axles.</u> Retighten axle flange nuts. Check for leaks.
35	X	X	X	<u>Tires.</u> Check for cuts, uneven wear, proper inflation and sizes. Replace missing valve caps. Check for matching tire size of duals, tandem bogies, and multidrives (4x4s, 6x6s).
36	X	X	X	<u>Wheels.</u> Check for rim damage and inspect for worn and elongated stud holes. Retighten all lug nuts.
37	X	X	X	<u>Springs.</u> Check for broken leaves or coils, loose U-bolts, or shackles.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
38	X	X	X	<u>Shock Absorbers.</u> Check for leakage. If faulty shock absorber action is suspected, remove the shock absorbers and perform bench tests in accordance with manufacturer's recommended procedures.
39	X	X	X	<u>Frame.</u> Check cross members, slide rails, brackets, welds, bolts, and rivets for condition and alignment.
40	X	X	X	<u>Fifth Wheel.</u> Check fifth wheel mounting plate, mounting plate bolts and safety lock. Check for cracked frame rails.
41	X	X	X	<u>Engine and Transmission Mountings.</u> Inspect supports for looseness or breaks.
42	X	X	X	<u>Cab.</u> Check doors, windows, glass, seats, seat belts, cushions, mirrors, body bolts, frames, sheet metal, paint and identification markings, floor, and ensure drain holes are not obstructed.
43	X	X	X	<u>Accident Damage.</u> Inspect for accident damage, loose or defective parts.
44	X	X	X	<u>Windshield Wipers.</u> Check the windshield wipers for condition and proper operation.
45	X	X	X	<u>Safety Guards.</u> Check all safety guards and be sure they are properly installed, secure, and in good condition.
46	X	X	X	<u>Trailer and Semitrailer.</u> Perform applicable operations. Check king pins for wear. Lubricate landing gear.
47	X	X	X	<u>Parts and Components.</u> Check miscellaneous parts and components (collateral equipment), as required.

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**APPENDIX L. NAVAL CONSTRUCTION FORCE (NCF)**  
**CONSTRUCTION EQUIPMENT INSPECTION GUIDE**

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
1		X	X	<u>Valve Mechanism.</u> Adjust valves as the need for service is indicated by valve noises or engine performance.
2		X	X	<u>Ignition System.</u> Check condition of distributor cap and rotor. Check timing and distributor spark advance.
3		X	X	<u>Spark Plugs.</u> Clean and gap spark plugs. Replace as required.
4	X	X	X	<u>Fuel System.</u> Check fuel filter and fuel pump screens and bowls. Clean or replace, as required. Adjust idle speed and fuel mixture, as required.
5	X	X	X	<u>Choke and Throttle Controls.</u> Check the choke, throttle linkage, engine shutoff and emergency shutoff for proper operation.
6		X	X	<u>Governor.</u> Inspect all linkage and pins for wear and the operating efficiency of the governor under varying load conditions. Notice signs of surging or improper operation. Lubricate as required. Using tachometer, check engine governed speed.
7	X	X	X	<u>Fuel Tank and Shutoff Valves.</u> Inspect fuel tanks for condition of mounting brackets, plugged air vents, and fuel lines for leaks or chafing. Check shutoff valve for proper operation.
8	X	X	X	<u>Lights.</u> Inspect all lights, signals, and reflectors.
9	X	X	X	<u>Battery.</u> Check water level. Clean battery, terminal connections, remove battery and clean box, check hold-down bolts and brackets.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
10		X	X	<u>Generators.</u> Check bearing seals for leaks. Clean dust and oil from air passages. Check condition of slip ring, commutator, and brushes for wear and proper alignment. Instruments must function properly. Lubricate as required.
11		X	X	<u>Starter.</u> Check that mounting bolts are tight and the cable connections are clean and tight.
12	X	X	X	<u>Instruments and Controls.</u> Check all instruments, gauges, switches, controls, and warning devices for proper operation.
13		X	X	<u>Water Charge and Time Device.</u> Inspect for functional accuracy and operation.
14	X	X	X	<u>Cooling Systems.</u> Check and tighten radiator mounts and hose connections. Clean and straighten radiator fins as necessary. Test antifreeze. Drain, flush, and refill cooling system at manufacturer's recommended service interval for mileage/hour usage.
15	X	X	X	<u>Fan Assembly and Fan Belts.</u> Inspect fan assembly. Inspect fan belts for cracks, frayed edges, and adjust tension in accordance with manufacturer's specifications.
16	X	X	X	<u>Exhaust System.</u> Check for exhaust gas leakage and excessive noise. Check rain caps.
17	X	X	X	<u>Clutch.</u> Check for clutch slippage. Check that free travel is in accordance with manufacturer's specifications.
18	X	X	X	<u>Hydraulic Brakes.</u> Check pedal or lever travel; fluid level; brake line condition; check for leaks; road test.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
19	X	X	X	<u>Full Air or Air Over Hydraulic Brakes.</u> Drain air reservoirs. Check air pressure buildup. Check brake chamber push rod. Check quick application valve and for complete release of all brakes. Check tractor protection valve controls in normal and emergency positions. Check operation of emergency brake application for trailers. Check brake hose condition. Road test to determine if brakes function properly. Test low air pressure alarm.
20		X	X	<u>All Brakes.</u> Inspect for wear and damage. Check and lube wheel bearings as required by manufacturer. Then perform Item 18 or 19, as applicable.
21	X	X	X	<u>Leaks.</u> Visually inspect the engine compartment, brake drums, and beneath the vehicle for indications of water, oil, fuel, or transmission fluid leaks.
22	X	X	X	<u>Lubricate.</u> Lubricate using lube charts and manufacturer's specifications. Check fluid levels and refill, as required.
23		X	X	<u>Engine Oil and Oil Filter.</u> Oil change intervals shall be based on the manufacturer's recommended maintenance interval for mileage/hour usage.
24	X	X	X	<u>Air Cleaner.</u> Check screens and oil level, service as necessary. Replace or clean elements, as required.
25	X	X	X	<u>Turbochargers and Superchargers.</u> Check for leaks and proper operation.
26	X	X	X	<u>Gear Boxes.</u> Check mounting and assembly bolts, breathers, lube levels, indications of leaking gaskets or seals. Drain and refill at manufacturer's recommended service interval.
27		X	X	<u>Automatic Transmission.</u> Do Item 26, then check automatic transmission in accordance with the manufacturer's recommended procedures. Check and adjust shifting linkage.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
28	X	X	X	<u>Exposed Drive Chains.</u> Check for wear and broken or cracked links and rollers. Adjust tension, if required.
29	X	X	X	<u>Belts, Drive.</u> Inspect for alignment, cracked and frayed edges. Adjust in accordance with manufacturer's specifications.
30	X	X	X	<u>Universal and Slip Joints.</u> Inspect and lubricate U-joints and slip joints in accordance with manufacturer's recommendations. Tighten all driveline bolts.
31	X	X	X	<u>Air Compressor, Valves, and Lines.</u> Check oil level. Clean air filters and drain water traps. Check compressor unloader safety valve, belts, and pulleys, and adjust in accordance with manufacturer's specifications. Check for leaks.
32	X	X	X	<u>Hydraulic System.</u> Check lines for leaks, packing glands for adjustment, controls for excessive wear. Check reservoir fluid level and vent openings. Hydraulic oil and filter change intervals will use the ON condition system. The system's oil is sampled and analyzed, but oil is not changed unless oil analysis indicates it needs to be changed, or the system's hours have reached manufacturer's recommended maintenance interval.
33	X	X	X	<u>Steering System.</u> Check the steering linkage for excessive looseness, proper alignment, and adjust the steering system according to manufacturer's recommended procedures, if necessary.
34	X	X	X	<u>Differential.</u> Check lube levels. Check for unusual noises and indications of leaking gaskets or seals. Drain and refill at manufacturer's recommended service interval for mileage/hour usage.
35	X	X	X	<u>Final Drives.</u> Check lube levels, security of bolts and capscrews. Check for leaks.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
36	X	X	X	<u>Tires.</u> Check for cuts, uneven wear, proper inflation and sizes. Replace missing valve caps. Check for matching tire sizes.
37	X	X	X	<u>Wheels.</u> Check for rim damage and inspect for worn and elongated stud holes. Retighten all lug nuts.
38		X	X	<u>Crawler Track Assembly.</u> Check plates, linkage, pins, and bushings for wear. Check track shoe mounting. Inspect and adjust track tension in accordance with manufacturer's instructions.
39	X	X	X	<u>Sprockets.</u> Check for tooth wear and alignment.
40	X	X	X	<u>Rollers.</u> Check for oil leaks, broken flanges, flat spots, and worn faces. Rollers should turn freely.
41	X	X	X	<u>Springs.</u> Check for broken leaves or coils, loose U-bolts, or shackles.
42	X	X	X	<u>Frame.</u> Check cross members, slide rails, brackets, welds, bolts, and rivets for condition and alignment.
43	X	X	X	<u>Engine Mounts.</u> Inspect supports for looseness or breaks.
44	X	X	X	<u>Cab.</u> Check doors, windows, glass, seats, seat belts, cushions, mirrors, body bolts, frames, sheet metal, floors, paint and identification markings, and ensure drain holes are not obstructed.
45	X	X	X	<u>Accident Damage.</u> Inspect for accident damage, loose or defective parts.
46	X	X	X	<u>Windshield Wipers.</u> Check the windshield wipers for condition and proper operation.
47	X	X	X	<u>Safety Guards.</u> Check all safety guards and be sure they are properly installed, secure, and in good condition.



<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
48	X	X	X	<u>Power Control Units.</u> Cable-type: Check oil levels; check for leaks and worn or glazed linings and bands. Hydraulic-type: Check operation of control valves and pumps. Inspect piston rods and linkage for wear. Check for leaks.
49	X	X	X	<u>Buckets.</u> Check for loose plates, rivets, welds, fasteners, tooth and bit holders, and improper working latches.
50	X	X	X	<u>Cutting Edges and End Bits.</u> Check attaching bolts or clips. Check distance that wear is approaching mold board or bit holder.
51	X	X	X	<u>Bearings and Bushings.</u> Inspect grease seals for leaks. Check bearings for adjustment and alignment. Lubricate as required.
52	X	X	X	<u>Moldboard and Lift Arms.</u> Check pins, pivot socket, bolts, welds, and shifting mechanism. Check list and side arms for bends and worn linkage. Check that pin keepers are in place.
53	X	X	X	<u>Fairleads.</u> Check sheaves, rollers, and mounting.
54	X	X	X	<u>Tagline.</u> Check in accordance with manufacturer's instructions.
55	X	X	X	<u>Cables and Sheaves.</u> Inspect condition of cables and attachments, replace in accordance with manufacturer's instructions. Check sheaves, pins, and bearings for wear and broken flanges.
56	X	X	X	<u>Boom and Leads.</u> Check cross members, slide rails, brackets, welds, bolts, and rivets for condition and alignment. Check boom harness for defective cables, pins, and sheaves.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
57	X	X	X	<u>Dipper Stick and Racking.</u> Check for general condition and alignment. Note any cracks, breaks, and loose bolts or rivets.
58	X	X	X	<u>Crowd Assembly.</u> Check for proper operation. Adjustment should be made according to the manufacturer's instructions.
59	X	X	X	<u>Boom and Hoist Drum Assemblies.</u> Check drum bearings, bushings, shafting, grease seals, and lagging.
60	X	X	X	<u>Swing Mechanism.</u> Inspect gears, circle, roller path, fins, roller shafts, and bearing seals for wear. Rollers should rotate freely. Swing locks and linkage must operate properly.
61		X	X	<u>Center Pin, House Carrier, and Hold-Down Rollers.</u> Inspect for wear. Adjust to manufacturer's specifications.
62		X	X	<u>Travel Mechanism.</u> Inspect and adjust clutches. Inspect travel lock, shafts, and linkage for excessive wear.
63	X	X	X	<u>Gears and Pinions.</u> Check open gears and pinions for proper lubrication.
64	X	X	X	<u>Hammer Links.</u> Check for bending and elongated mounting bolt holes.
65	X	X	X	<u>Jaws, Liners, and Concaves.</u> Check for wear and secure mounting.
66		X	X	<u>Toggle Assembly.</u> Check plates, seats, wedges, and ways for wear, cracks, and breaks. Check tension spring for adjustment.
67	X	X	X	<u>Eccentric Shaft or Sleeve.</u> Check for wear and leaks.

<u>Item</u>	<u>Service</u>			<u>Item Description</u>
	<b>A</b>	<b>B</b>	<b>C</b>	
68	X	X	X	<u>Conveyors and Drives.</u> Check condition of belts and splices, alignment, scrapers and cleaners, tail pulley, chains and buckets, sprockets, and safety guards.
69	X	X	X	<u>Screen and Drives.</u> Check for wear, mounting, alignment, and operation. Check that rivets, bolts, and braces are in place and secure.
70	X	X	X	<u>Bins, Hoppers, and Chutes.</u> Check braces and fastenings. Inspect operation of gates and controls.
71	X	X	X	<u>Mixer Drum.</u> Check cleanliness of drum and mixing flight, chutes, bearings, and trunion rollers for wear.
72	X	X	X	<u>Parts and Components.</u> Check miscellaneous parts and components, as required.

## **Appendix M. Fuels, Lubricants, Preservation, and Rustproofing Materials**

### **Section 1. LUBRICANTS**

1. **Engine Oils: API/SAE Service Classifications and Military Specifications.** The current trend of manufacturers of vehicle major components is to use both the multigrade and the single grade lubricant oils. It is suggested that in all cases you follow the manufacturers' guidelines on lubricating oils. Basically, multigrade oils have a greater temperature range and hold up much longer than most single grade oils, and also have better lubricating qualities.

Motor oils are classified by the American Petroleum Institute (API), The Society of Automotive Engineers (SAE), and the American Society for Testing and Materials (ASTM). Jointly they have developed the present commercial system to designate and identify motor oil classifications.

The lubricating oil in an engine is continually exposed to severe stresses. It may be because a vehicle is driven with a heavy load and varying working temperatures under most unfavorable conditions. It is essential that the oil has the correct qualities and contains different additives to counteract wear, corrosion, and fatigue. Since engine design and operating conditions vary for different vehicles, the lubricating oil has been adapted to the various engine types and ranges of use. The range of use for the oil is usually indicated on the oil drum or can, for example, "For Service CD," or "For Service SG." In a number of cases, the composition of the oil may be such that it has several different ranges of use, for example, "For SG/CD/CDII."

Engine oil classifications not included in this manual have been determined obsolete because test hardware or fluids used to define those performance categories are no longer available. The following is a list of current API letter designations.

a. **CF2 – Severe-Duty Two-Stroke-Cycle diesel Engine Service.** Oils designated for this service are typical of two-stroke-cycle engines that require highly effective control over wear and deposits. Also, this service meets all performance requirements of API service category "CDII".

b. **CF4 - High-Speed Four-Stroke-Cycle Diesel Engine Service.** Oils designated for this category were adopted in 1990 and describes oils for use in high speed four-stroke-cycle diesel engines. These oils exceed the requirements of the "CE" category by providing improved control of oil consumption and piston deposits. They are particularly suited for on highway, heavy truck applications

c. **CG4 – Severe-Duty High-Speed Four-Stroke Diesel Engine Service.** Oils designated for this category were adopted in 1994 and describes oils for use in high-speed four stroke cycle diesel engines used in severe duty. These oils are used in highway and off highway applications where fuel sulfur content is less than 0.5% by weight. This oil can be used in engines requiring CD, CE, and CF4 oils.

d. **CH4 – High-Speed Four-Stroke Diesel Engine Service.** Oils designated for this category were adopted in 1998 and describes oils for use in high-speed four stroke-cycle diesel

engines. These oils are specifically compounded for use with diesel fuels ranging in sulfur content up to 0.5% weight. CH4 oils are superior in performance to those meeting API CD, CE, CF4 and CG4 and can effectively lubricate engines calling for those API service categories. When combined with the appropriate "S" category, for example, "SJ" they can also be used in gasoline and diesel powered vehicles such as automobiles, light trucks, and vans. When recommended by the vehicle or engine manufacturer.

e. SJ 1996 Gasoline Engine Service. Oils designated for this service are typical of present gasoline engines in passenger cars, light trucks, and vans that operate under manufacturers' recommended maintenance procedures. Oils developed for this service provide improved control of engine deposits, oil oxidation, and engine wear relative to oils developed for previous categories. These oils also provide protection against rust and corrosion. Oils that meet API service category "SJ" may be used when API service categories "SH, SG, SF, SE," are recommended.

Within each range of use, the oil is divided into different viscosity classes, for example, "SAE 10W," "SAE 20W/20," and "SAE 30." The "SAE" classification is exclusively based on the viscosity of the oil. Oils with the single designation, for example, "SAE 10," "SAE 20," are known as single viscous oils, or single grade. "SAE 10W/20" is an example of a designation for a double viscous oil, or double grade. This designation means that with the oil it is just as easy to start the engine as with an "SAE 10W" oil, and that it has the same lubricating capacity at high temperatures as an "SAE 20" oil. An oil which covers three SAE numbers, for example, "SAE 10W/30" is known as multigrade oil, and one that covers more than three, "SAE 15W/40" oils, are known as stay-in-grade oils.

The SAE number with the letter "W" is based on a viscosity at 0°F (-18°C) and the others on the viscosity at 212°F (100°C).

The *Engine Manufacturers Association* is an excellent reference to determine the commercially available oils that meet API/SAE specifications. Compiled by the Engine Manufacturers Association, it can be obtained for about \$70.00 from EMA, 401 North Michigan Avenue, Chicago, Illinois, 60611.

### **Military Specification MIL-L-2104G.**

Intended Use. The grade SAE 10W oil is not to be used in high-output, two-cycle compression-ignition engines. The lubricating oils, except as mentioned above, covered by this specification are intended for the crankcase lubrication of reciprocating spark-ignition and compression-ignition engines used in all types of military combat/tactical ground equipment and for the crankcase lubrication of high-speed, high-output, supercharged compression-ignition engines used in all ground equipment. The oils are also intended for the same application in power transmissions, hydraulic systems, and non-hypoid gear units of engineer/construction equipment, materials handling equipment and combat/tactical ground equipment. The lubricating oils covered by this specification meet service classification CG4, CF of SAE J183 and are intended for all conditions of operational service, as defined by appropriate lubrication orders, when temperatures are above -13°F (-25°C).

## **Military Specification MIL-L-46167C.**

Intended Use. Lubricating oil covered by this specification is intended for the crankcase lubrication of reciprocating spark-ignition and compression-ignition engines used in all types of ground equipment. The oils are also intended for the same application in power transmissions, hydraulic systems, and non-hypoid gear units of engineer/construction equipment, materials handling equipment and combat/tactical ground equipment. The specification product is intended for crankcase lubrication under all conditions of service, as defined by appropriate lubrication orders, when ambient temperatures are in the range of 41<sup>0</sup>F (5<sup>0</sup>C) to -67<sup>0</sup>F (-55<sup>0</sup>C). The lubrication oil covered by this specification is not to replace Grade 10W, MIL-L-2104 lubricant, in areas where ambient temperatures will not be below -13<sup>0</sup>F (-25<sup>0</sup>C). In addition, the lubricating oil covered by this specification is intended for use in arctic regions as an all weather (year-round) power transmission fluid for military tactical/combat ground equipment. The lubricating oil covered by this specification meet service classifications API CG4, CF of SAE J183 and are intended for all conditions of operational service, as defined by appropriate lubrication orders.

### **TACTICAL ENGINE OILS**

<u>Military Specification</u>	<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
MIL-L-2104	OE/HDO 15/40 (SAE 15W/40)	1 QT	9150-01-178-4725
		5 GL	9150-01-152-4118
		55 GL	9150-01-152-4119
	OE/HDO 10 (SAE 10W)	1 QT	9150-01-177-3988
		5 GL	9150-00-186-6668
		55 GL	9150-00-191-2772
	OE/HDO 30 (SAE 30)	1 QT	9150-01-178-4726
		5 GL	9150-00-188-9858
		55 GL	9150-00-189-6729
	OE/HDO 40 (SAE 40)	1 QT	9150-00-189-6730
		55 GL	9150-00-188-9862
	MIL-L-46167 OEA (SAE 0W-20)	5 GL	9150-00-402-2372
		55 GL	9150-00-491-7197

## COMMERCIAL HD ENGINE OILS

<u>Military Specification</u>	<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
A-A-52306	CHDO 15W-40 (SAE 15W-40)	12 QT	9150-01-351-9019
		5 GL	9150-01-352-2962
		55 GL	9150-01-351-9018
	CHDO 30 (SAE 30)	12 QT	9150-01-351-9016
		5 GL	9150-01-352-8090
		55 GL	9150-01-351-9015
	CHDO 40 (SAE 40)	55 GL	9150-01-352-8091

2. **Gear Lubricants.** Operating temperatures of axles and transmissions should be kept under 250°F (122°C). Operating at high temperatures breaks down the lubricant and increases the rate of oxidation and shortens lubricant life.

Caution should always be taken in cold weather operations. Time should be given for lubricating oils to warm up, because metal-to-metal contact is possible.

Proper oil level is a must, and should be checked at regular intervals. Look for signs of oil leaks because low oil levels could cause costly repairs. This is especially critical if the vehicle is operating in mountainous regions where angularity of the transmission and axles have to be taken into consideration.

In all cases, follow the recommendations of the component manufacturer. Experimenting with nonapproved additives and lubricants can prove to be expensive either through premature failures or voiding of warranty on the component involved.

a. **API Classifications for Power Trains.** A list of API classifications for power trains is shown below.

(1) **GL-1** designates the type of service characteristics of automotive spiral bevel and worm gear axles and some manually operated transmissions operating under mild conditions of low unit pressures and sliding velocities, that straight mineral oil can be used satisfactorily. Oxidation and rust inhibitors, defoamers, and pour depressants may be used to improve the characteristics of lubricants for this service. Frictional modifiers and extreme pressure agents shall not be used.

(2) **GL-2** designates the type of service characteristics of automotive type worm gear axles operating under such conditions of load, temperature, and sliding velocities, that lubricants satisfactory for API-GL-1 will not suffice.

(3) **GL-3** designates the type of service characteristics of manual transmission and spiral bevel axles operating under moderately severe conditions of speed and load. These service conditions require a lubricant that has load carrying capacities greater than those which satisfy API-GL-1 service, but below the requirements of lubricants that satisfy API-GL-4 service.

(4) **GL-4** designates the type of service characteristic of gears, particularly hypoid in vehicles operated under moderate speeds and load conditions.

(5) **GL-5** designates the type of service characteristic of gears, particularly hypoid in vehicles operated under high speed and/or low speed high torque conditions.

(6) **GL-6** designates the type of service characteristic of gears, particularly high offset hypoid in passenger cars and other automotive equipment operated under high speed and high performance conditions.

b. Efficiency and Life of Axles and Transmissions. If a lubricant is suitable for more than one of the API classifications for power train classes, it should be indicated. The classification does not include oils for automatic transmissions, torque converters, differential brakes, etc., which require special lubricants.

The efficiency and life of all axles and transmissions depend on proper lubrication to reduce friction, help cool, and keep dirt and wear particles away from moving parts. Improper lubricants are a major cause of component failure. It is essential to use recommended lubricant specifications and capacities.

As a general practice, the mixing of lubricants should be avoided. Mixing gear lubricants with even small amounts of other types of lubricants can result in antagonistic reactions between the additive chemicals in the mixture. Such reactions may result in a significant loss of gear protection. The mixing of MIL-L-2105E approved lubricants, as in a top-off situation, should not impair lubricant performance because these lubricants are required to demonstrate stability when mixed with previously qualified gear lubricants.

### **Military Specification MIL-L-2105E.**

Intended Use. The gear lubricants covered by this specification meet American Petroleum Institute (API) Service Classification GL-5 and MT1, and are intended for automotive gear units, heavy-duty industrial type enclosed gear units, steering gear units, heavy-duty non-synchronized type 7 & 8 manual transmission, and fluid lubricated universal joints of automotive equipment. The lubricants covered by this specification are intended for use as defined by appropriate lubrication orders when ambient temperatures are above -65°F (-54°C).



### GEAR LUBRICANTS

<u>Military Specification</u>	<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
MIL-L-2105	GO75 (SAE 75W)	1 QT	9150-01-035-5390
		1 GL	9150-01-048-4593
		5 GL	9150-01-035-5391
	GO 80/90 (SAE 80W-90)	1 QT	9150-01-035-5392
		1 GL	9150-01-313-2191
		5 GL	9150-01-035-5393
		55 GL	9150-01-035-5394
	GO 80/140 (SAE 85W-140)	1 QT	9150-01-048-4591
		5 GL	9150-01-035-5395
		55 GL	9150-01-035-5396
	GO 80/90 (SAE 80W-90) Limited Slip	5 GL	9150-00-001-9395

### HYDRAULIC FLUIDS

<u>Military Specification</u>	<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
MIL-H-46170 Type 1 (Yellow) Flash Point 390°F	FRH	1 QT	9150-00-111-6256
		1 GL	9150-00-111-6254
		5 GL	9150-00-111-6255
		55 GL	9150-01-158-0462
MIL-H-46170 Type 2 (Red) Flash Point 390°F	FRH	1 QT	9150-01-131-3323
		1 GL	9150-01-131-3324
		5 GL	9150-01-131-3325
		55 GL	9150-01-119-8149
MIL-H-6083 Flash Point 147°F	OHT	1 QT	9150-00-935-9807
		1 GL	9150-00-935-9808
		5 GL	9150-00-935-9809
		55 GL	9150-00-935-9810

3. **Grease Lubricants.** A lubricating grease is a solid to semifluid mixture of a fluid lubricant and thickening agent. Additives that give special properties may be incorporated. The fluid component may be a mineral oil or a synthetic fluid; the thickener may be a metallic soap or a nonsoap substance such as clay, a urea compound, or other material. The most commonly used soaps are calcium, lithium, sodium, aluminum or a combination of these with other materials. When mixing different types of greases, the possibility of incompatibility exists and should be avoided since it may result in excessive thinning and leakage. Cleanliness is the prime consideration in the use of greases. The removal of surface grease and dirt accumulation from dispensing equipment and application points such as zerks and grease gun fitting is essential. Excessive dispensing pressures and pumping rates should be avoided because they tend to cause seal deformation and rupture.

Automotive service greases are classified into two groups: (1) chassis lubricants and (2) wheel bearing lubricants. These are further separated into performance categories: chassis grease categories "LA" and "LB," and wheel bearing grease categories "GA," "GB," and "GC." Greases that meet the requirements of chassis grease and wheel bearing grease are considered multipurpose greases, and should carry the appropriate NLGI designations for both groups to avoid confusion with commercial, nonautomotive multipurpose greases.

a. **National Lubrication Grease Institute (NLGI) Classifications.** A list of the NLGI classifications is shown below.

(1) **LA** service is typical of chassis components and universal joints in passenger cars, trucks, and other vehicles under mild duty only. Mild duty is encountered in vehicles operated with frequent relubrication in non-critical applications.

(2) **LB** service is typical of chassis components and universal joints in passenger cars, trucks, and other vehicles under mild to severe duty. Severe duty is encountered in vehicles operated under conditions, which may include prolonged relubrication intervals, or high loads, severe vibration, exposure to water or other contaminants.

(3) **GA** service is typical of wheel bearings in passenger cars, trucks, and other vehicles under mild duty. Mild duty is encountered in vehicles operated with frequent relubrication in non-critical applications.

(4) **GB** service is typical of wheel bearings in passenger cars, trucks, and other vehicles under mild to moderate duty. Moderate duty is encountered in most vehicles operated under normal urban, highway, and off-highway service.

(5) **GC** service is typical of wheel bearings in passenger cars, trucks, and other vehicles under mild to severe duty. Severe duty is encountered in certain vehicles operated under conditions that result in high bearing temperatures. This includes vehicles operated under frequent stop-and-go service (buses, taxis, urban police cars, etc.) or under severe braking service (trailer towing, heavy loading, mountain driving, etc.).

b. Grease Consistency. The consistency of grease is an important factor in its ability to lubricate, seal and remain in place, and for the ease of dispensing. . Consistency is the degree of hardness of a grease and may vary considerably with temperature. This has been classified by the National Lubricating Grease Institute into categories; 000, 00, 0, 1, 2, 3, 4, 5 and 6. Most automotive greases are in the NLGI No. 1, 2, or 3 ranges, that is, from soft to medium consistency. Grease containers should display the consistency number as well as the category designation.

### **Military Specification MIL-G-10924.**

Intended Use. The grease covered by this specification is intended for the lubrication and surface corrosion protection of all ground vehicles and equipment operated over the temperature range from -65<sup>0</sup>F (-54<sup>0</sup>C) to 356<sup>0</sup>F (180<sup>0</sup>C). This grease may also be used in other applications within this temperature range where National Lubricating Grease Institute (NLGI) No. 2 consistency greases with oxidation resistant and corrosion prevention properties are desirable.

### **TACTICAL GREASES**

<u>Military Specification</u>	<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
MIL-G-10924 GAA		14 OZ	9150-01-197-7693
		1.75 LB	9150-01-197-7690
		6.50 LB	9150-01-197-7689
		35.00 LB	9150-01-197-7692
		120.00 LB	9150-01-197-7691
MIL-G-81322 WTR		8 OZ	9150-00-181-7724
		1.75 LB	9150-00-944-8953
		6.25 LB	9150-00-145-0268
		35.00 LB	9150-00-935-5851

### **GENERAL GREASES**

<u>Military Specification</u>	<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
VV-G-632	None	8 OZ	9150-00-753-4649
		6.50 LB	9150-00-235-5532
		35.00 LB	9150-00-273-2374
VV-G-671	GG2	1.75 LB	9150-00-190-0918
		7.50 LB	9150-00-190-0919

**Automatic Transmission Fluid.** Fluid friction characteristics are important in automatic transmissions that use lubricated clutches to change gear ratios. No single fluid will satisfy the friction requirements of all transmission types. Modification of friction values is possible with additives and is responsible for the two main types of automatic transmission fluids now in use: (1) Friction modified Dexron II, and (2) Nonfriction modified Type F.

Dexron III / Mercon is an automatic transmission fluid designed for new generation, electronically controlled transmissions. This product may also be used in previous GM automatic transmission units such as those requiring Dexron IIE, Dexron II, and Dexron fluids; and is a qualified Ford Mercon ATF. Further, it meets the performance requirements for Allison Transmission Division C-4, and major hydraulic pump manufacturers' requirements for antiwear hydraulic fluids.

#### **AUTOMATIC TRANSMISSION FLUID**

<u>Specification</u>	<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Dexron III	None	1 QT	9150-00-698-2382
		5 GL	9150-00-657-4959
		55 GL	9150-01-114-9968
Type F	None	1 QT	9150-01-092-9755
		1 GL	9150-00-843-1636

#### **5. Hydraulic Brake Fluids**

**MIL-B-46176.** A silicone brake fluid classified as DOT5, which is resistant to water and prevents corrosion.

<u>Military Specification</u>	<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
MIL-B-46176 BFS		1 GL	9150-01-102-9455
		5 GL	9150-01-123-3152

**CAUTION:** *MIL-B-46176 or DOT5 silicone-base brake fluid is not compatible with DOT3 or DOT4 glycol ether-base brake fluid. Prior to changing brake fluid types, adequate flushing of the brake system must be accomplished to remove all traces of previous types of brake fluids.*

## 6. Miscellaneous Lubricants

PTL	Lubricant for pneumatic tools and equipment that contain additives for extreme-pressure water emulsifying, adhesion, and rust protection and having good oxidation resistance.
SM(H)	Straight mineral or ashless inhibited oil for heat transfer, airline lubricator and circulation systems.
SM(M)	Mineral seal oil.
SM(N)	Naphthenic oil, straight mineral. Low pour point; for example, maximum pour point -35°F (-37°C) for VG 15.
SM(R)	Refrigeration compressor oil.
SM(E)	Electrical insulating or transformer oil.
SPL	Special oil; footnoted on charts.
TCA	Engine oil for two-stroke cycle engines that use oil fuel mixtures.

**NOTE:** *The National Stock Numbers (NSN) incorporated in this appendix are subject to change. Consult FED LOG before preparing a requisition for lubrication, fuel, or preservative.*

a. Oil Rock Drill Pneumatic Tool. No Military Specification number. A natural petroleum base lubricant with antiwear, anticorrosion, antioxidation inhibitors for lubrication of air-powered equipment. Contains an emulsifying agent to entrap and keep in suspension any moisture in the air stream to prevent water wash out and breakdown of the lubricating film. ROCK DRILL OIL IS NOT INTERCHANGEABLE WITH OTHER LUBRICATING OILS.

API Service Classification: PTL

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
None	5 GL	9150-00-142-9556

b. Oil Refrigerant, Compressor. Military Specification number MIL-VV-L-825A, Type II. This oil is used for reciprocating-type compressor units of refrigerant equipment.

API Service Classification: SM(R)

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
None	1 QT	9150-00-598-2911
None	1 GL	9150-00-292-9657

c. D-A Wire Rope Saver. No Military Specification number. D-A Wire Rope Saver is designed for service in all types of wire rope applications. It provides extreme pressure, antiwear protection, and controls rust and corrosion.

Intended Use. Forms a durable protective coating which extends wire rope life. Contains a fast-evaporation solvent for ease of application. Temperature range of -100°F (-74°C) to 120°F (49°C).

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
None	5 GL	9150-01-179-0228

d. Tar and Asphalt Remover, HD127. No Military Specification number. HD127 is used as a degreaser and cleanser for the removal and dispersal of greases, oils, fats, asphalts, tars, dirt, and baked-on oils and greases in contact with concrete, metals, wood, and other surfaces. It is ideal for cleaning asphalt equipment.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
None	55 GL	6850-01-140-8749 (degreasing compound)
None	55 GL	6850-00-559-2836 (cleaning compound)

## Section 2. APPROVED FUELS FOR USE BY THE NAVAL CONSTRUCTION FORCE

1. **MOGAS.** Military Specification MIL-G-3056 is suitable for use in spark-ignition gasoline engines and equipment.

Intended Use. Gasolines covered by this specification are intended for ground combat, tactical and administrative vehicles and combat service support equipment as indicated in vehicle and equipment manuals. Gasolines are supplied in two types and intended for OCONUS use.

Type I	Intended for general use at temperatures above 0°F (-18°C)
Type II	Intended for use in areas where the mean temperature is consistently below 32°F (0°C).

<u>Mil. Symbol</u>	<u>Quantity</u>	<u>NSN</u>
MG-1	Bulk	9130-00-160-1818
MG-2	Bulk	9130-00-160-1830

2. **Gasoline.** Specification ASTM D 4814 is suitable for use in spark-ignition gasoline engines and equipment.

Intended Use. Gasolines covered by this specification are intended for ground combat, tactical and administrative vehicles and combat service support equipment, as indicated in vehicle and equipment manuals. The use of fuels that contain oxygenates are designated as reformulated and mandated in CONUS.

<u>Grade</u>	<u>Quantity</u>	<u>NSN</u>
Limited Grade Unleaded	Bulk	9130-00-148-7102
Regular Grade Unleaded	Bulk	9130-00-148-7103
Premium Grade Unleaded	Bulk	9130-00-148-7104

3. **Diesel Fuel.** Federal Specification FED-VV-F-800C.

Intended Use. This specification covers diesel fuel oils suitable for use in automotive diesel or compression-ignition engines and gas turbine engines used in mobile electric power generators under all climatic conditions.

<u>Military Symbol</u>	<u>Definition</u>
DF-A	Arctic-grade diesel fuel is for high-speed, diesel engines, gas turbine engines used in mobile electric power generators, and in pot-type burner space heaters in areas where ambient temperatures lower than -25°F (-32°C) generally occur, and where it is impractical to maintain fuel storage capabilities. This grade of diesel fuel should

not be used for slow-speed, stationary-engine applications or in geographical areas limited in terms of sulfur content.

DL-A	Low sulfur version of DF-A maximum sulfur content 0.05 WT percent.
DF-1	Winter-grade diesel fuel for use in high-speed diesel engines and gas turbine engines used in mobile electric power generators in areas in which ambient temperatures as low as -25°F (-32°C) may occur. This grade of diesel fuel may be used for medium-speed stationary engine applications where fuel heating facilities are not available and in geographical areas not limited in terms of sulfur content.
DL-1	Low sulfur version of DF-1 maximum sulfur content 0.05 WT percent.
DF-2	Regular-grade diesel fuel is for use in all high-speed/medium-speed engine applications and gas turbine engines used in mobile electric power generators in geographical areas not limited in terms of low-temperature operability or sulfur content.
DL-2	Low sulfur version of DF-2 maximum sulfur content 0.05 WT percent.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
DFA (Use below -25°F)	Bulk	9140-00-286-5283
DLA	Bulk	9140-00-000-0186
DF-1 (Use below 32°F)	Bulk	9140-00-286-5286
DL-1	Bulk	9140-00-000-0185
DF-2 (Use above 20°F)	Bulk	9140-00-286-5294
DL-2	Bulk	9140-00-000-0184

4. **Alternate Fuels.** Although VV-F-800 diesel fuel may be indicated as the primary fuel, JP8 will be used as the primary fuel in those theaters where the single fuel on the battlefield is implemented in accordance with DoD Directive 4140.25, *DoD Bulk Petroleum Management Policy*. Cautions that accompany fuels must be followed to prevent adverse effects to the equipment. Maintenance schedules may require modification.

**Intended Use.** The fuel covered by this specification is intended for use in aircraft turbine, ramjet, and rocket engines. JP-5 is also approved for use in compression ignition internal combustion engines as a replacement for FED-VV-F-800C Diesel Fuel, all grades. Temperature range -57°F to 440°F. Minor adjustment to engine throttle settings may be required to obtain the same output as with DF2 fuel.



a. Turbine Fuel, Aviation, Grade JP-5. Military Specification MIL-T-5624 covers two grades of aviation turbine fuel: (1) JP-4 wide cut, gasoline type NOT USED IN NCF EQUIPMENT; and (2) JP-5 high flashpoint, KEROSENE TYPE.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
JP-5	Bulk	9130-00-273-2379

b. Turbine Fuel, Aviation, Grade JP-8. Military Specification number MIL-T-83133. Grade JP-8 is a high flashpoint kerosene fuel designed for jet aircraft and may be used in NCF equipment as a substitute fuel. Minor adjustments to engine throttle settings may be required to obtain the same output as with DF-2 fuel.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
JP8	Bulk	9130-01-031-5816

**CAUTION:** *Diesel fuel sulfur content should be monitored by the user. If sulfur content exceeds 0.5 percent, an increase in engine oil Total Base Number (TBN) or drain intervals may be required to prevent excessive engine wear. Consult engine manufacturer's manual or contact NFELC PORT HUENEME for recommendations.*

## 5. Antifreeze.

a. Military Specification number MIL-A-46153. This antifreeze is a corrosion-inhibited ethylene glycol-base antifreeze for use in all liquid-cooled internal combustion engines.

Intended Use. Ethylene glycol is intended for use in cooling systems for protection against freezing in ambient temperatures of -55°F, when diluted to 60 percent by volume with water, and -30°F when diluted to 50 percent by volume with water.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
N/A	55 GL	6850-01-441-3223
	5 GL	6850-01-441-3221
	1 GL	6850-01-441-3218

b. Military Specification number MIL-A-11755. This antifreeze is a corrosion-inhibited ethylene glycol-base antifreeze for use in all liquid-cooled engines for extremely low temperatures.

Intended Use. Arctic-type antifreeze compound is intended for use in cooling systems for protection against freezing in regions where the ambient temperature remains for extended periods of time close to -40°F, but may drop as low as -90°F. This material may also be used as a heat transfer liquid for military applications where low temperatures are encountered. Must be used full strength, as packaged.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Arctic Grade	55 GL	6850-00-174-1806

**NOTE:** *Discretion should be used to determine cooling system protection requirements; at least the following procedures should be implemented:*

- a. Use an antifreeze tester, such as TEST Kit, NSN 6630-01-011-5039.
- b. Only unserviceable antifreeze should be discarded. All usable antifreeze should be reused.
- c. Add an approved rust inhibitor, such as NSN 6850-00-753-4967 or equivalent, in the cooling system when antifreeze is not used.
- d. If cost effective, use an antifreeze recycler such as NSN 6850-01-380-9047.

6. Solvent, Dry Cleaning. Federal Specification number FED-P-D-680. Consult Material Safety Data Sheet (MSDS) prior to using these solvents.

Intended Use. Type I is intended for use as a comparatively safe dry cleaning solvent, and degreaser for washing parts.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
SD-1	Bulk	6850-00-264-9039
SD-1	55 GL	6850-00-285-8012
SD-1	5 GL	6850-00-264-9038

Intended Use. Type II is intended for use where a higher flash point (140 degrees F) dry cleaning solvent and degreaser for washing parts is required.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
SD-2	Bulk	6850-00-637-6135
SD-2	55 GL	6850-00-285-8011
SD-2	5 GL	6850-00-274-5421

Intended Use. Type III is intended for use where a very high flash point (200 degrees F) and odorless dry cleaning solvent and degreaser for washing parts is required.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
SD-3	55 GL	6850-01-331-3350
SD-3	5 GL	6850-01-331-3349

### Section 3. PRESERVATION AND RUSTPROOFING MATERIALS

1. **Compound, Silicone, Soft Film.** MIL-C-2156. This compound is used as an inhibitor and lubricant for mating threaded or non-threaded surfaces of ferrous components. Also intended as a lubricant for rubber components such as O-rings and gaskets. For use under extreme conditions of service and storage, when freezing at -65°F or oxidation and deterioration at 160°F is not permissible, and where water insolubility and sealing properties are essential. May also be used by the NCF for preservation of brake cylinders with silicone brake fluid.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
None	1 GL	6850-00-664-4959
None	5.3 OZ	6850-00-702-4297

2. **Primer Coating, Synthetic, Rust-Inhibiting, Lacquer-Resisting.** MIL-TT-P-664. This primer is used as a base coat on bare or chemically treated metal surfaces. Contains zinc chromate. This primer should be used with caution when preserving brakes, clutches, pulleys, and exposed gears. Because of product variability it may have a tendency to leave gum deposits that may not be easily removed.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
None	1 GL	8010-00-292-1127
None	5 GL	8010-00-161-7275
None	1 PT	8010-00-899-8825

3. **Corrosion Preventive Compound, Cold Application, For Motor Vehicles.** MIL-C-16173. For rustproofing motor vehicles: Grade 1 for protection of underbody, boxed-in, and concealed areas; Grade 2 for protection of exterior surfaces and inside headliners; Grade 3 is a two-coat application for protection of radiator exteriors; and Grade 4 is for protection of electrical components.

a. **MIL-C-16173.** For protection of noncritical metals when exposed to outdoor weather conditions. Use where dry-to-touch film is desired. Should not be used on items that require removal of film. Removal can be accomplished by vapor degreasing or petroleum solvents.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Grade 1	1 QT	8030-00-062-6950
	1 GL	8030-00-231 -2345
	5 GL	8030-00-244-1299
	55 GL	8030-00-244-1300

b. MIL-C-16173. Extended under cover protection to interior or exterior surfaces of machinery instruments, bearings, or material with or without use of supplementary barrier materials. For outdoor use for limited periods where metal temperature does not produce film flow. Remove with vapor degreasing or petroleum solvents.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Grade 2	11 OZ	8030-00-118-0666
	1 QT	8030-01-149-1731
	1 GL	8030-00-244-1297
	5 GL	8030-00-244-1298
	55 GL	8030-00-244-1295

c. MIL-C-16173. Use where fresh or salt water must be displaced and the corrosion prevented or stopped. Use to protect interior surfaces of machinery, instruments, or material under cover for limited periods, and to protect critical bare steel or phosphated surfaces for extended periods, when satisfactorily packaged.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Grade 3	1 PT	8030-00-837-6557
	1 GL	8030-00-244-1296
	5 GL	8030-00-244-1293
	55 GL	8030-00-244-1294
Grade 4	1 PT	8030-00-903-0931
	1 GL	8030-00-062-5866
	5 GL	8030-00-526-1605
	55 GL	8030-00-526-1604

d. MIL-C-11796. For preservation of antifriction bearings and machined surfaces. Can be easily removed at room temperature with petroleum solvents or vapor degreasing.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Class 3	5 LB	8030-00-231-2353
	35 LB	8030-00-285-1570

e. MIL-L-3150. To lubricate and preserve internal surfaces of machine assemblies other than internal combustion engines, transmissions, differentials, and fuel tanks. Remove with vapor degreasing or petroleum solvents.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
PL-M	4 OZ	9150-00-271-8427
	1 QT	9150-00-231-2361
	5 GL	9150-00-231-2356
	55 GL	9150-00-231-2357

f. MIL-VV-L-800. Use as a general-purpose lubricating oil and preservative. Remove with petroleum solvents or vapor degreasing. Not used for the preservation of fuel tanks or engines.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
PL-S	4 OZ	9150-00-273-2389
	16 OZ	9150-00-458-0075
	1 QT	9150-00-231-6689
	1 GL	9150-00-231-9045
	5 GL	9150-00-231-9062
	55 GL	9150-00-281-2060

g. MIL-L-21260. These engine oils are designed for preservation, break in and use in all combat/tactical diesel and gasoline engine powered ground vehicle and equipment systems. These oils are operational oils that meet MIL-L-2104 requirements, in addition to corrosion and preservation requirements. These products can be used where MIL-L-2104 oils are specified until the first recommended oil change. These oils meet the API CD/CDII performance criteria. PE-10 grade is not for use in high-output two-cycle diesel engines.

<u>Military Symbol</u>	<u>Package Data</u>	<u>NSN</u>
PE15/40 Grade 15W-40	5 GL	9150-01-293-7696
PE15/40 Grade 15W-40	55 GL	9150-01-293-2772
PE10 Grade 10W	5 GL	9150-00-111-3199
PE10 Grade 10W	55 GL	9150-00-111-0208
PE30 Grade 30	5 GL	9150-00-111-0209
PE30 Grade 30	55 GL	9150-00-111-0210
PE40 Grade 40	5 GL	9150-01-293-2773
PE40 Grade 40	55 GL	9150-01-293-7697
PE50 Grade 50	5 GL	9150-00-111-0211
PE50 Grade 50	55 GL	9150-00-111-0214

h. MIL-G-10924. For the lubrication and surface corrosion protection of all equipment operated over the temperature range -65°F. This grease may also be used in other temperature ranges where an NLGI No. 2 consistency grease and corrosion preventive properties are desirable.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
None	2-1/4 OZ	9150-01-197-7688
	14 OZ	915001-197-7693
	1.75 LB	9150-01-197-7690
	6.5 LB	9150-01-197-7689
	35 LB	9150-01-197-7692
	120 LB	9150-01-197-7691

i. MIL-P-3420. For packaging parts and bulk materials that require volatile corrosion inhibitors. Includes wrapping paper, moisture vapor barrier paper, corrugated paper, etc.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
MIL-P-3420	200 FT X 36 IN	8135-00-664-4010

j. MIL-C-16173. General-purpose indoor and limited outdoor preservation or corrodible metals with or without an overwrap where tack free and transparent coating is required. Nonmiscible with lubricating oil. Remove with petroleum solvents or vapor degreaser.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Grade 4	1 PT	8030-00-903-0931
	1 GL	8030-00-062-5866
	5 GL	8030-00-526-1605
	55 GL	8030-00-526-1604

k. MIL-P-46002. Intended for use in enclosed components (transmissions, differentials) where the volatile internal components must be preserved in oil. It is not intended for use as an operational preservative oil and should not be used in applications where elastomeric components are present. It is not effective unless an adequate reservoir of oil can be maintained. This material can also be used effectively as a contact preservative.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Grade 1	1 QT	9150-00-889-3523
	5 GL	9150-00-985-7293
	55 GL	9150-00-407-0973

l. MIL-C-16173. For corrosion protection where fresh or salt water must be displaced from corrodible surfaces; to protect interior surfaces of material under cover for limited periods.

<u>Military Symbol</u>	<u>Quantity</u>	<u>NSN</u>
Grade 5	1 GL	8030-00-223-3193
	5 GL	8030-00-137-1671

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## **APPENDIX N. LIVE STORAGE FOR CIVIL ENGINEERING SUPPORT EQUIPMENT**

1. **Assignment Of CESE.** Many Naval Construction Force (NCF) units are assigned numerous pieces of Civil Engineering Support Equipment (CESE) that are required only for contingency, emergency, or occasional use and, consequently, have extended periods of nonuse. This extra equipment invites improper use, absorbs maintenance man-hours, and often suffers deterioration from excessive exposure to the elements.

2. **Live Storage Program.** The NCF units are hereby provided guidance for a program of live storage of CESE. It is realized that general application of this instruction shall not provide specific coverage for all CESE, nor the varied operational and climatic conditions experienced geographically. When more frequent exercising is warranted, the Equipment Officer or Maintenance Supervisor is authorized to vary the exercise intervals.

a. Within 10 working days after the completion of the Battalion Equipment Evaluation Program (BEEP), the maintenance supervisor is tasked with forwarding a CESE live storage listing by Equipment Code (EC) to the perspective Brigade Equipment office.

b. Place equipment in live storage when there is no foreseeable need for the equipment for a period of two preventive maintenance (PM) cycles or 80 working days. All cranes, however, shall be maintained in an active status under control of the crane crew. The CESE eligible for live storage must be in A5 condition and be controlled as outlined:

(1) Equipment placed in live storage shall retain its original PM group and be placed in a 20-day cycle. Example: If a piece of equipment is in PM group 4 it shall also be placed in PM group 24; a piece of equipment in PM group 37 shall also be placed in PM group 17. A master live storage cycle schedule shall be prepared for the CESE assigned to live storage, using the same format prescribed in Chapter 4, Section 2, which provides instructions for establishing a PM schedule for active CESE.

Cost Control shall provide to the Live Storage Supervisor a weekly list of CESE to be cycled by USN numbers and the type of cycle due. The Live Storage Cycle Log (Figure N-1) shall be reviewed and signed by the maintenance supervisor. At the end of each workweek, the completed Live Storage Cycle Log shall be returned to Cost Control in order to update the Live Storage Service Sheet (Figure N-2).



LIVE STORAGE CYCLE LOG			Weekly startup and inspection procedures (encl 8	20, 40, and 60 day operational test procedure (encl 9			80- day operational test procedure (encl 10	Date: _____	
ECC	USN	DESCRIPTION	weekly	20	40	60	80		

Maintenance Supv. Signature: \_\_\_\_\_

Figure N-1. Live Storage Cycle Log

LIVE STORAGE SERVICE SHEET									
EC		USN					DESC		
DATE		TYPE SERVICE					COLL/ATTACH INV.		NAME INSPECTOR/ OPERATOR
	BPM	20 DAY	30 DAY	40 DAY	60 DAY	SHOP 09			
DATE IN STORAGE					DATE OUT OF STORAGE				AUTHORIZATION FOR REMOVAL

Figure N-2. Live Storage Service Sheet

(2) A copy of the Live Storage Service Sheet shall be maintained in the History Jacket for each piece of stored equipment that indicates the date the unit was placed in storage and a chronological order of inspections, operational test, and repairs performed. The Live Storage Service Sheet shall not be purged from the History Jacket.

(3) The Equipment Officer shall be responsible for all equipment placed in live storage. The Live Storage Program shall be under the control of the Maintenance Supervisor.

(4) The Live Storage Branch shall be adequately staffed with construction mechanics and equipment operators to properly maintain and cycle the equipment to preserve a state of readiness and to meet all of the provisions of this instruction.

(5) Personnel assigned to maintain and exercise equipment must be adequately skilled and experienced. No operator shall be assigned to exercise any item of special purpose equipment who is not thoroughly familiar with the vehicle, its accessories, and attachments, and is properly licensed to operate them.

(6) All equipment placed in live storage shall be parked in a specially designed area and grouped by Equipment Code. Keys shall be under positive control in the Cost Control Office to prevent use of the equipment prior to proper de-preservation.

(7) All Equipment Status Boards shall indicate which equipment is in live storage.

(8) Based upon the numbers of the active maintenance force (floor mechanics), the optimum ratio of active pieces of CESE to mechanics is 5 to 1. CESE in excess of a 5 to 1 ratio should be considered for placement in live storage. The ratio of 5 to 1 is the goal, and it is recognized that the composition, experience levels, and capabilities of the full maintenance force, as well as construction requirements, may make it unattainable or unnecessary.

c. Minimum Maintenance Requirements. Minimum maintenance requirements for equipment prior to placement in live storage are outlined as follows:

(1) Open type 09 ERO for initial live storage and perform to a "B" preventive maintenance level if one has not been performed within the last 20 days, except oil change intervals will use the manufacturer's recommended interval for mileage/hour usage. If the equipment is under manufacturer's warranty, use manufacturer's maintenance procedures.

- (2) Perform all repairs necessary to place equipment in A5 condition.
- (3) CESE shall be thoroughly cleaned.
- (4) Ensure that batteries are fully charged.
- (5) Open air system draincocks.
- (6) Spray all exterior surfaces with Grade 2 corrosion preventive rustproofing (NSN 8030-00-244-1295).
- (7) Top off all fuel tanks.
- (8) Fill cooling system with the proper mixture of antifreeze.
- (9) All attachments shall be stored and maintained by the Collateral Equipment Custodian.
- (10) All collateral equipage shall be inventoried on an 80-day cycle.

d. Weekly Start-up and Inspection Procedures. Live storage inspection, maintenance, and operation procedures for equipment in live storage shall be to inspect and start up once a week, in accordance with the following procedures.

- (1) Conduct a walk-around inspection to ensure the equipment does not have any obvious deficiencies such as loose wheel lugs, flat tires, leaks, and body or structural damage.
- (2) Inspect equipment to ensure that the following items are properly serviced.
  - (a) Engine, drive train, and chassis are properly lubricated.
  - (b) Cooling system is at specified level, and contains the proper mixture of antifreeze.
  - (c) Batteries are fully charged and contain the specified amount of electrolyte.
  - (d) Hydraulic system is at capacity and contains the proper grade fluid.

(3) Start and run engine until it reaches operation temperature. Monitor gauges, inspect for leaks, and listen for abnormal noise. Ensure the following:

- (a) Brake system is functioning properly.
- (b) Fuel system has no leaks and is topped off.
- (c) Check lights, reflectors, wipers, and horn.

e. 20-, 40-, and 60-Day Dry Operational Test Procedures

(1) Conduct an inspection and warm-up as prescribed by Weekly Start-up and Inspection Procedures listed in paragraph 2.c.

(2) Depreserve as necessary to permit all systems to be operated.

(3) Start the engine and check gauges, electrical system, operation of all controls, and inspect for leaks and abnormal noises.

(4) Drive all vehicles at least 10 miles. In the case of heavy equipment, run at least 30 minutes. This time may include the warmup period.

(a) Drive the equipment at various speeds and operate all controls under a limited load and observe the following items:

- (1) Engine operates without abnormal noises, vibration, overheating, or other evidence of malfunction.
- (2) Brakes function properly.
- (3) Power train components function smoothly without grinding or other unusual noises.
- (4) Steering mechanisms function smoothly with no evidence of binding or shimmy.
- (5) Hydraulic and pneumatic systems function smoothly with no evidence of unusual leakage at seals or have a tendency bind.

(b) After operation, conduct a walk-around inspection to determine if there are any leaks or other discrepancies.

- (c) Use an adequately equipped truck-tractor or towing unit for semi trailers and towed equipment to permit testing of trailer lights and brakes.
- (d) If an Equipment Repair Order (ERO) is required to repair any discrepancies, open to repair Type 09 and complete as outlined by current instructions.
- (e) Upon completion of road test, represerve as required.
  - ◆ Mark tires before vehicle operation to indicate the segment in contact with the ground. When the vehicle is returned to storage after exercise, inspect to ensure that the unit rests on another segment of the tire.
  - ◆ Take all possible measures to prevent accumulation of water in vehicle bodies.

f. 80-Day Fully Operational Test Procedures. At 80-day intervals conduct the following inspection on all live storage equipment. Conduct all the procedures described for the 20-, 40-, and 60-Day Operational Test, and include the procedures described for the Weekly Start-up and Inspection, and perform the following:

- (1) Initiate an ERO for Type 09 repair (01,02,03).
- (2) During the operation test, load the equipment to capacity and operate for at least five miles. Then unload the vehicle and inspect for discrepancies. Reload the vehicle and drive for an additional five miles. Unload the equipment and turn over to the maintenance shop for any required repairs.
- (3) Operate CESE, such as dozers, loaders, scrapers, and graders, for at least 1/2 hour under full load. After 1/2 hour under full load, inspect the equipment for discrepancies. After the inspection, operate the equipment an additional 1/2 hour under full load. Then turn over the equipment to the maintenance shop for any required repairs.
- (4) Change oil in all equipment, if applicable. Oil change intervals shall be based on the equipment manufacturer's recommended maintenance interval for mileage/hour usage.

- (5) Any Direct Turnover (DTO) parts ordering shall be done at this time and put on the vehicle during the next 80-day operational test.
- (6) Inventory and service all collateral equipage and attachments.
- (7) After the repairs and lubrication are complete, represerve as required.
- (8) After returning to storage, the Live Storage Service Sheet shall be updated from data obtained from the ERO.

g. Removal from live storage.

(1) To support construction requirements, CESE may be removed from live storage and placed in a ready status.

(2) When equipment is removed from live storage and has not received an 80-day inspection within the last 40 working days, an ERO will be initiated, and maintenance to the "02" PM level will be performed.

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